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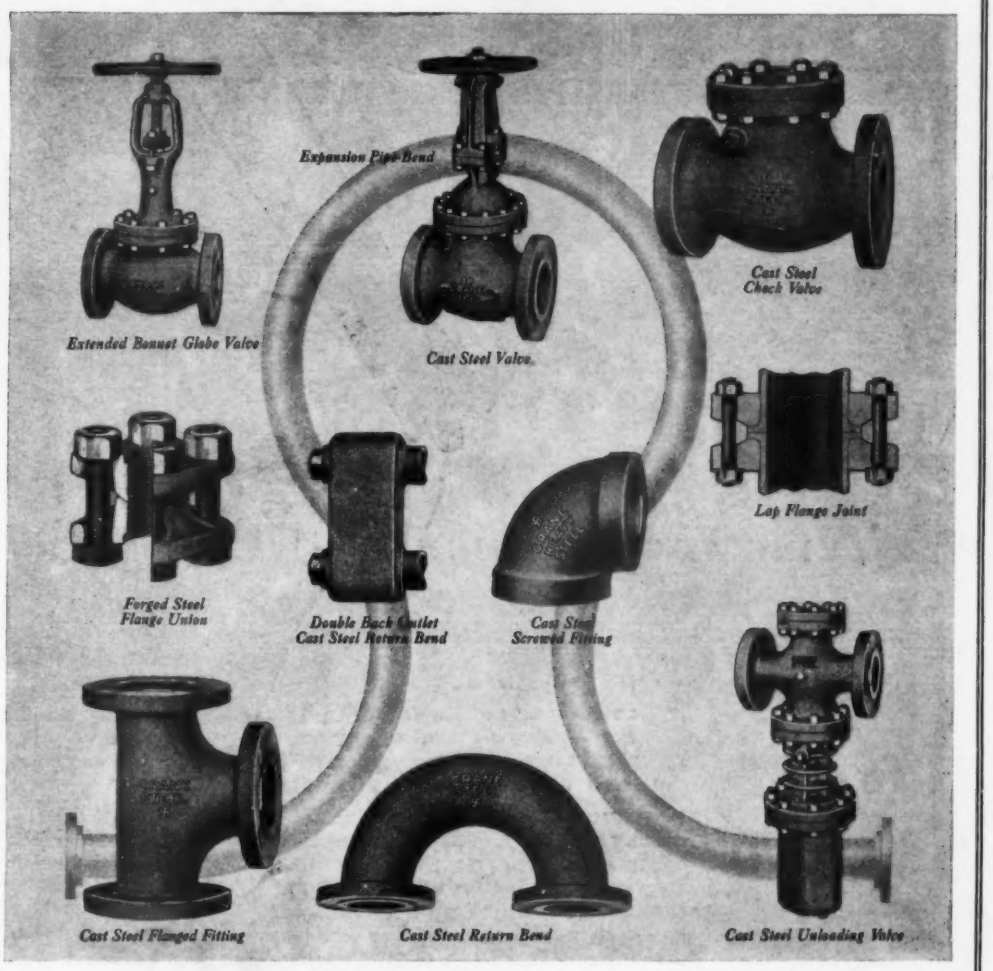
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PRODUCING REFINING MARKETING

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Production Shows Slight Decline

Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Texas Panhandle, With Gain of 3,363 Bbls. Per Day, Only Field to Show Much Increase. California Output Settles

By James McIntyre

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

The slow but steady upward march of crude production in the United States since the latter days of April was again interrupted in the past week, when a decline of 3,240 barrels was noted in the average daily output as compared to the record of the previous week. The production of the heavy grades of oil fell off 8,140 barrels, most of which is charged to the Smackover Field, in Arkansas. The production of light oil increased 4,900 barrels, and of this the Panhandle of Texas is credited with 3,363 barrels, the largest gain credited to any one producing division during the week. The Wewoka Pool, in Seminole County, Oklahoma, showed an increase of 1,345 barrels. These two pools supplied nearly all the increase in the lighter grades of oil.

California experienced a slight falling off in both light and heavy oils. Oklahoma, outside of Wewoka, declined slightly. Taken as a whole the crude situation from the standpoint of the producer continued satisfactory, with no disquieting news in the course of the week of the discovery of any new pools of importance. The significance of the northwest extension of the Tonkawa deep sand area, in Kay County, Oklahoma, first by a well of The Texas Company, and then by the Gypsy Oil Company, was modified somewhat by the fact that the Gypsy Oil Company's big well was producing an appreciable percentage of salt water. This Tonkawa extension was the outstanding field event in the past two weeks.

The general crude situation may be better appreciated when it is known that in the same week last year the output of oil was 2,179,020 barrels per day, or 149,044 barrels in excess of the daily production last week.

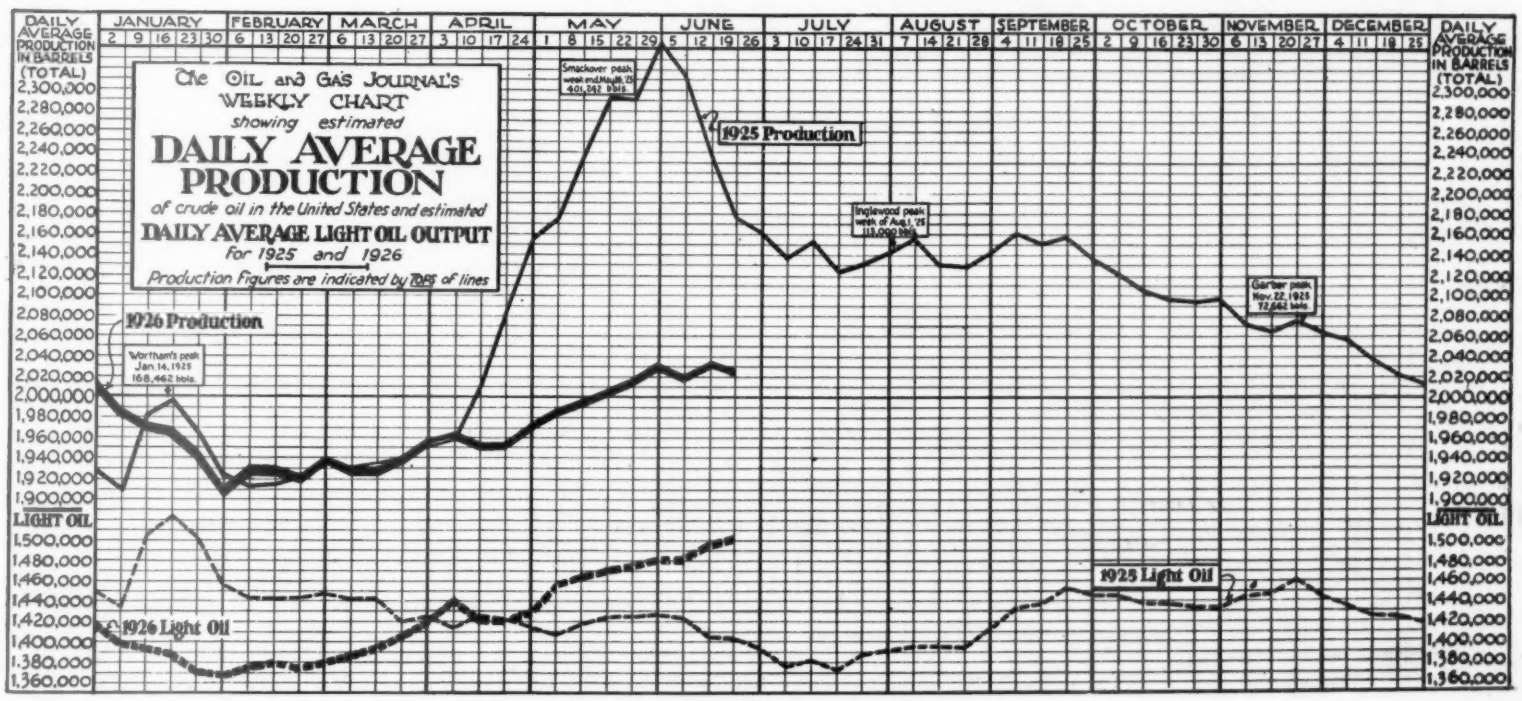
The withdrawals of oil from storage continue without abatement, indicating a steady demand on the part of the refining branch of the industry notwithstanding weather conditions in almost every part of the country are not conducive to a normal consumption of gasoline. The situation with the refiners continues to be the only disturbing element in the general situation. They are buying crude freely and turning it into products, but their market may be described as "soft," lacking the vigor it should have at this time of year, and this applies to practically all items on the refiner's list of products.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended June 19, and a comparison with the previous week follows:

	June 19		June 12	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	36,420	.....	34,715	.....
Burbank	45,530	.....	45,635	.....
Other Osage Fields	34,260	.....	34,230	.....
Cushing and Shamrock	21,760	.....	21,710	.....
Bristow and Eastern Bristow	29,600	.....	29,635	.....
Cromwell	17,480	.....	17,140	.....
Garber	37,200	.....	39,555	.....
Blackwell-Braman	17,490	.....	18,170	.....
Davenport	10,280	.....	10,285	.....
Wewoka	29,540	.....	28,195	.....
Northern Miscellaneous	112,380	.....	112,285	.....
Southern Fields	66,650	.....	66,735	.....
Total Oklahoma	458,590	.....	458,290	.....
North Louisiana	43,630	15,630	44,280	16,420
Arkansas—				
Smackover Light	17,025	.....	16,800	.....
Smackover Heavy	.....	126,000	.....	131,495
Miscellaneous	23,835	.....	23,935	.....
Total Arkansas	40,860	126,000	40,735	131,495
North Central Texas	173,307	.....	173,873	.....
Texas Panhandle	49,716	.....	46,353	.....
Powell	29,900	.....	29,200	.....
Mexia, Currie, Richland, etc.	15,460	.....	15,330	.....
Wortham	8,840	.....	8,250	.....
Kansas	107,540	.....	107,410	.....
Total Mid-Continent Area	927,843	141,630	923,721	147,915
Gulf Coast	.....	90,350	.....	94,145
Southwest Texas	.....	39,585	.....	38,545
Eastern	108,250	.....	108,100	.....
Rocky Mountain Area	115,818	.....	114,290	.....
California—				
Santa Fe Springs	48,500	.....	49,500	.....
Long Beach	109,000	.....	110,000	.....
Huntington Beach	43,500	.....	45,500	.....
Torrance	6,100	22,900	6,000	22,500
Dominguez	20,500	.....	21,500	.....
Rosecrans	16,500	.....	17,500	.....
Inglewood	28,000	20,500	29,500	21,000
Ventura Avenue	39,000	.....	33,500	.....
Remainder of State	41,000	211,000	40,000	210,000
Total California	352,100	254,400	353,000	253,500
Total United States	1,504,011	525,965	1,499,111	534,105
Grand Total	2,029,976		2,033,216	

→ **Total Decrease, 3,240 Bbls.; Light Oil Increase, 4,900 Bbls.** ←


The OIL and GAS JOURNAL'S
WEEKLY CHART
showing estimated
DAILY AVERAGE PRODUCTION
of crude oil in the United States and estimated
DAILY AVERAGE LIGHT OIL OUTPUT
for 1925 and 1926
Production Figures are indicated by TOPS of lines
1926 Production
1925 Production
1926 Light Oil
1925 Light Oil
Wortham's peak Jan 14, 1925 168,462 bbls.
Smackover peak week ending May 25 401,342 bbls.
Inglewood peak week of Aug 1 '25 113,000 bbls.
Garber peak Nov. 22, 1925 72,662 bbls.
DAILY AVERAGE PRODUCTION IN BARRELS (TOTAL)
LIGHT OIL
JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

WHAT AND WHERE TO BUY—PAGES 167-168-169

Oklahoma Refined Market Again Quiet

Gasoline Prices Decline, Despite Large Purchase of Higher Gravities. Kerosene and Naturals Drop Sharply

By Neil Williams

Developments in the Oklahoma (Group 3) refined markets the past week again were not entirely favorable. The substantial buying of higher gravity gasolines the week before apparently had only a brief strengthening effect, and, with practically all other products continuing sluggish, a generally declining market again prevailed.

Additional purchases of higher gravity gasolines, amounting to between 150 and 200 cars, were reported in Oklahoma and North Texas, but, except for this, the demand for gasolines on the open market was comparatively quiet.

Due to the general sluggishness, gasoline prices were off from an eighth to a quarter cent on practically all grades. Kerosenes were slashed another cent and fuel oils slipped from 2½ to 5 cents a barrel. Gas oil and distillates were featureless but prices were firm. Some grades of lubricating oil stocks, especially bright stocks, were active.

The weakening in gasoline was particularly disappointing to refiners, who had expected markets to hold firm for more than a week with the removal of 1,000 cars of material from the Mid-Continent. However, it was generally felt that the purchases were of very material benefit in preventing markets from breaking more than they have.

This condition is taken by market students as another indication of the fact that there is too much gasoline in storage. Records of refiners show that there is greater volume of business than last year and this is increasing but the increased production of gasoline coupled with the unusually large stocks with which refiners as a whole entered the season has prevented a "favorable" market.

Refiners generally do not believe that stocks in the Mid-Continent are burdensome, especially among the smaller refiners, but in their efforts to bring about a real market the influence of large stocks in other areas has been noticeably felt. The disappointing market developments of the past few weeks constitute one more demonstration of the folly of attempting to predict price trends of refined products from local situations. The statistical situation of the smaller Mid-Continent refiners considered as a whole would not point to lower prices. It is apparent, however, that these companies are only a small factor in determining prices on products whose marketing is national in scope.

The failure of prices to hold longer than they did after the substantial export buying last week and the continued lack of life in the domestic demand at this time of year has resulted in a general feeling of uncertainty in the gasoline market. Refiners are slower than ever to take a step and are merely waiting developments.

What the developments will be remain to be seen but refiners are hoping that the next few weeks including the Fourth of July holidays will witness such an enormous increase in consumption that jobbers will be forced to enter the market with a larger demand than ever before.

With approximately 1,000 cars of higher gravity gasolines off the market due to the purchases a week ago, any increased domestic demand over the Fourth of July, it is believed, will have a better than ordinary effect on the market. Buying for over the Fourth is expected to be noticeable during the next few days.

How jobbers have been able to stay out of the market on a large scale until now, however, has been the object of much discussion. Large consumption of gasoline is reported in all sections of the country but so far, with few exceptions.

(Continued on Page 142)

REFINED MARKET BAROMETER

Developments in refined markets of the country the past week were not entirely favorable. Gasolines generally were uncertain. The reported heavy consumption over the country and substantial export buying in the Mid-Continent only a week ago have not insured strong refinery prices due largely to the large quantities available, and future trends are in doubt. Kerosenes also were much less in demand during the week, especially in the Mid-Continent where prices dropped sharply. Fuel oil at Atlantic seaboard refineries continued strong but in most other sections this product was inactive with further declines. Gas oil and distillates generally were unchanged. Natural gasolines east of the Rocky Mountains were extremely sluggish. California naturals were firm. Lubricants showed improvement.

Mid-Continent—Price trends on practically all refined products downward. Gasolines soft despite purchase of 1,000 cars of higher gravities last week. Kerosenes drop sharply with few calls for product. Fuel oil continues decline in Oklahoma and Texas but in other areas fairly firm due to local conditions. Gas oil and distillates unchanged. Lubricants fair with bright stocks brisk. Natural gasolines much weaker.

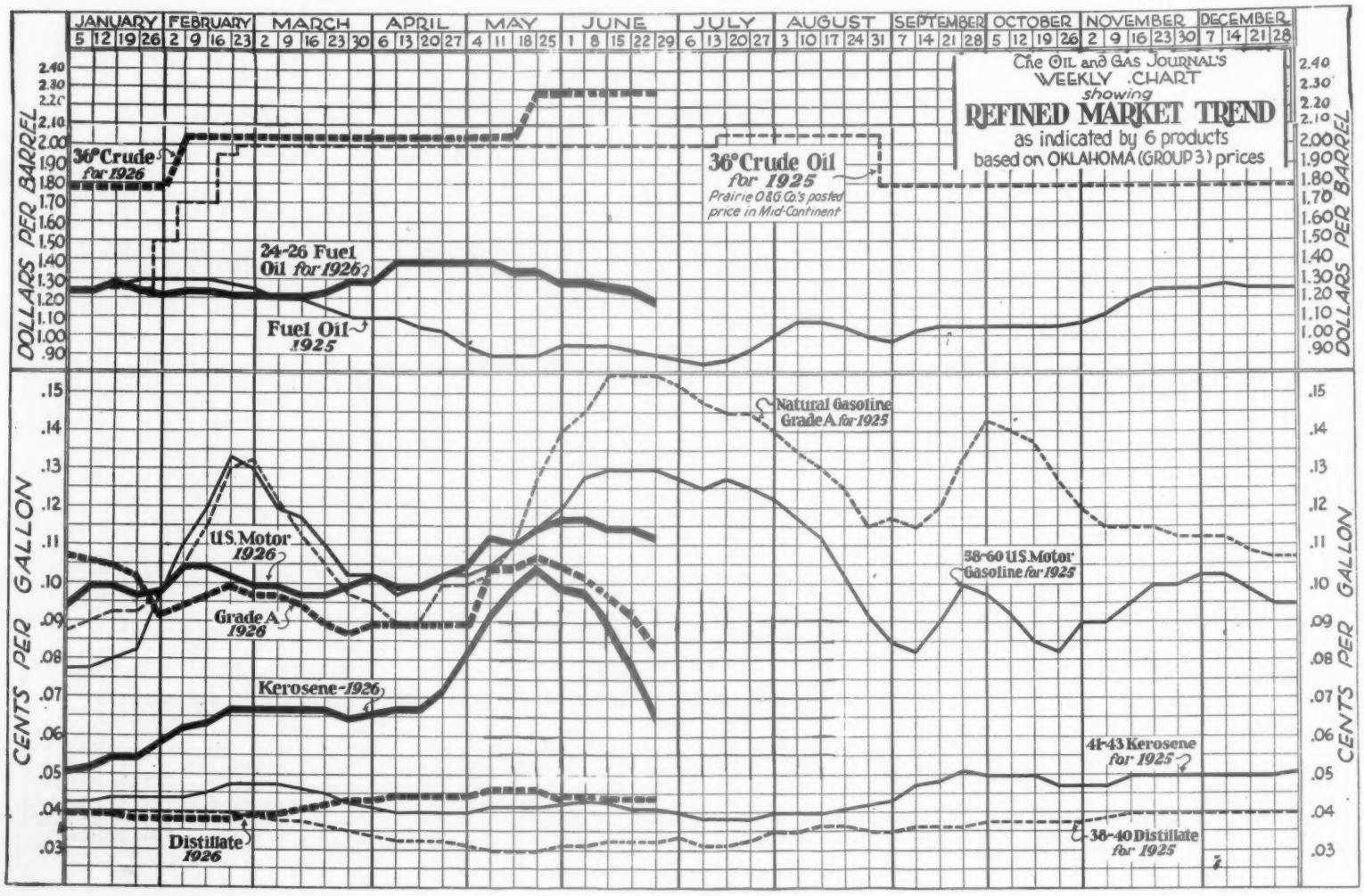
Atlantic Seaboard—Prices unchanged. Gasoline outwardly firm despite disappointing demand. Fuel oil and gas oil strong. Weakening seen in kerosene. Cylinder stocks improved. Petrolatum slow.

Pennsylvania—Gasoline quiet and prices being shaded. Kerosene market off with marked slump in demand. Neutral demand fair but cylinder stocks still slow. Fuel oil down. Wax good.

Chicago—Gasoline demand disappointing. Jobbers apparently well stocked. Kerosene calls few. Distillates hanging fire. Gas oil steady. Fuel oil dull.

California—Smaller refineries cutting gasoline prices. Other products unchanged with natural gasolines firm.

Gulf Coast—Unchanged.


JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
The Oil and Gas Journal's WEEKLY CHART showing REFINED MARKET TREND as indicated by 6 products based on OKLAHOMA (GROUP 3) prices
DOLLARS PER BARREL
CENTS PER GALLON
36° Crude for 1926
36° Crude Oil for 1925
Prairie O&G Co's posted price in Mid-Continent
24-26 Fuel Oil for 1926
Fuel Oil 1925
Natural Gasoline Grade A for 1925
U.S. Motor 1926
Grade A 1926
Kerosene-1926
38-60 U.S. Motor Gasoline for 1925
41-43 Kerosene for 1925
Distillate 1926
38-40 Distillate for 1925

Osage Oil and Gas Lessees Far Apart

Both Claim Ownership in Residue Casinghead Gas Which Oil Lessees Wish to Pump Back Into Sands. Hearing in Washington

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 18.—All of the various phases of the controversy relating to residue or tail gas in which oil and gas lessees in the Osage Indian Reservation are engaged were threshed out at a hearing before Commissioner Charles H. Burke, commissioner of Indian Affairs, at the Interior Department Building in this city today. There were nearly 30 attorneys, engineers and others connected with the various companies present.

From the beginning it was known that this proceeding was only preliminary to court action because it is acknowledged on both sides that however the Commissioner of Indian Affairs may rule in respect to the question involved, the party receiving the adverse decision will take the matter into court. Indeed, there seems to be no way to take the differences between the oil and gas lessees into court until there is some ruling by the Secretary of the Interior as a basis for appealing to the courts by the parties against whom the decision is brought.

Another Conference of Lessees

This action by the Secretary of the Interior will be in the form of regulations affecting the disposition of the residue gas and when the hearing was concluded there was an indefinite understanding that the several parties to the controversy will appoint joint members of a committee to confer with J. George Wright of the Indian Office in an attempt to agree upon the drawing up of regulations that will allow the industry to proceed in the Osage until court action is concluded, fixing the ownership and future disposition of this residue or tail gas.

Commissioner Burke called the meeting to order and J. George Wright reviewed the controversy between the oil and gas lessees. He said that there are oil wells in the Osage that are becoming exhausted and in some of the fields experiments are being made by injecting air and gas in the wells to force it through the sand and increase the production. The gas lessees are firm in believing that if the oil lessees wished to inject gas into their wells they should buy the gas from them. He read the provision of the lease of the oil lessees to the effect that "all casinghead gas shall belong to the oil lessee" and also the provision that such gas, not utilized by the oil lessee on his premises or on an adjoining lease held for operating purposes in a reservation, shall go to the gas lessee. He said the oil lessee thinks he has a right to that gas for operating purposes and the gas man thinks he is not entitled to it. As this residue gas has no force accompanying it to put it into the pipelines, the gas lessees have spent large sums of money on booster stations.

He explained the main question as being whether or not the oil men are entitled to enough of that residue or tail gas to return it to the ground to induce more flow of the oil. He said such introduction of the gas into the wells had increased production in some fields over 100 per cent.

Commissioner Burke remarked that his mind was occupied with the thought whether the Department could now change the regulations to adjust differences between these contending interests that have vested rights than can be finally determined only by legal procedure.

Commissioner Wright responded that the Department could construe the word "operation;" the oil lessee should depend upon the construction of that word as limiting their rights to obtain this residue gas.

Commissioner Burke remarked that this was another case in which the oil lessees interested ought to get together and settle for themselves.

Greenslade Appears for Oil Men

Mr. Greenslade, of the Gypsy Oil Co., speaking for the oil lessees, placed before the committee records showing increases in oil production after the application of pressure to the sands. In 1925, he said, operators having a surplus of gas considered storing it by pumping it back into the wells simply as a reservoir to prevent waste.

"The effect of pumping that gas in the sand was so successful in accelerating oil production that their methods of operation were changed," he said.

He gave instances of such increased production and said he had scores of cases that showed the marked increase from the Bartlesville sand. Not only was there an increase of oil production but also in gas. A well of the Carter Oil Co. in November, 1925, had gas forced into it on the lease and at the end of six months the daily average production of gas increased from 2,214,000 to 3,237,000 cubic feet, or 46.2 per cent and at the same time the gasoline yield increased 58.1 per cent. He said there were many instances of this kind which showed the enormous importance of putting this method of production into more general use.

Osage Production Dwindling

"The peak of oil production in the Osage Nation has passed," said Mr. Greenslade. "From records in the Osage Agency in 1923, 8,690 wells of the Osage produced 41,810,187 bbls. of oil. That was the gross production for the fiscal year ended June, 1924.

"Now with 9,357 wells, 1,000 more than were producing in 1924, the production for 1925, is 33,000,000 bbls. In other words production of oil has fallen off to the extent of 8,000,000 bbls. with 1,000 more wells."

Mr. Greenslade said there is now of residue or tail gas 40,000,000 feet per day, or more than sufficient for operating purposes and there would be left 20,000,000 feet per day. That is, estimating this operation would consume a certain quantity of gas.

"Our experts all agree," he continued, "that this operation will not diminish the volume of casinghead gas."

"Then who is injured?" asked Commissioner Burke.

"Absolutely nobody," replied Mr. Greenslade. "That would not only increase our oil production but it would increase the gross volume of casinghead production and that would increase the gasoline production and the gross volume of residue or tail gas, so that we all would have profited equally. In every instance in which we have any record there has been demonstrated an increase in the gas production as well as the oil, from a slight increase up to 600 per cent.

"If this method has been demonstrated to be a success why do we not go ahead and put it into effect? Then came the conflict between the two classes of operators. In the last analysis our conference failed because the gas lesses, for one reason or another, said they were unwilling to agree to deliver the residue gas to the oil lessees under any terms by which the gas was to be pumped back into the wells, on account of their contracts or their investments, for the disposition of the gas. They would not or could not agree to deliver this gas to the oil lessees for this purpose and we were forced to ask the Department to get us that right. It is a regulation which could be made by the Secretary of the Interior.

In 1919, Mr. Greenslade said, the regulations, were amended after a hearing at which operators were present, after which they proceeded on the basis that the casinghead gas belonged to the oil lessee. It was so recognized in the briefs of the oil and gas lessees filed at that time and so recognized by Commissioner Sells and Secretary Lane. There was no attempt on the part of anybody, or by the Department, to divest the oil lessee of the casinghead gas or the residue gas. He said the gas lessee at that time, nor since, have never been under any obligation to take that residue gas.

He said the policy of the regulations are in harmony with the law in respect to the ownership of casinghead gas. This statement is borne out by the decision in the case of Connellee vs. Magnolia Petroleum Co., 279 Southwestern 597.

Franklin Speaks for Gas Lessees

Mr. Greenslade was followed by W. C. Franklin, of the Tidal Oil Co., representing the gas lessees.

"So far as I know," said Mr. Franlin, "the industry is united in a belief that a restoration of pressure will be possible in the Osage as well as elsewhere. We are not here to refute statements that a restoration of pressure will be possible to rejuvenate old wells and will help wells not so old. However, the extent of the effect of this method on the production of gasoline and casinghead gas is a matter on which the industry is not united. I think you will not find that petroleum engineers in the Mid-Continent Field will hazard their reputation by making positive statements in respect to the result of this method in increasing the volume of production."

He said his committee was not contradicting the statement that the whole effect of restoration of pressure would be profitable.

Must Go to Court

E. A. Richardson, representing the Kay County Gas Co. and the gas lessees, generally, said that the ownership of the gas as between the gas and oil lessees was not before the Department as a subject for discussion. They would not abide by such a decision if against them but would seek redress in the courts.

Mr. Richardson said so far as any assumption respecting the result of the injection of gas in the wells was concerned, it must be borne in mind that there are always special circumstances existing in every field. He thought there should be no water injection, on account of dangers attending it, except upon application made to the department and hearings before the superintendent of the Osage Reservation to which alll parties should have notice and then the Department should determine whether that application should be granted. He did not know what power the Depart-

(Continued on Page 142)

TEXAS SUPREME COURT DECISION OF INTEREST TO LEASE OWNERS

FORT WORTH, Tex., June 21.—That an oil lease in the State of Texas will be cancelled or forfeited for failure on the part of the lessee to comply with the implied covenant of reasonable development, since an oil lease is "not an absolute fee, but a determinable fee, which is ended when the lessee ceases to exercise reasonable diligence in the development of the land for minerals according to the terms of the lease" is the momentous decision handed down last week by Judge Ocie Speer of the Supreme Court in the suit of the W. T. Waggoner Estate vs. Sigler Oil Co., involving 3,000 acres out of the original lease of 85,000 acres in Wilbarger and Baylor Counties, executed in June, 1919.

The ruling was made in spite of the fact that no drilling stipulations were included in the lease except for the initial well and that a specific clause provided each producing well should hold 2,000 acres. Two wells were completed on the property in 1920 and were produced for about three years but the recommendation of the court was that the lease be cancelled except for 10 acres including the two wells of the Sigler Oil Co. in recognition of possible equities. This reversed the judgment of the Court of Civil Appeals and the District Court.

Oil Lease a Joint Enterprise

An oil lease, in the opinion of the court, is a joint enterprise between the owner and lessee. "No other interpretation so fairly represents the real intention of the parties as that of determinable fee, terminating upon breach of any material condition, expressed or implied, essential to the purposes of the contract," the opinion reads.

"The action to cancel, so called, is not in reality the equitable action to forfeit for breach of covenant, either as to condition, precedent or subsequent, and therefore to divest title for cause. It is in truth a proceeding to recover the land unaffected by the lease which has expired by its terms, as interpreted. The case is maintained on the theory, not that the lease should be forfeited for cause, but that there is no further title—it has ended."

Effects Far Reaching

This decision will probably have more far-reaching effects than any other ruling affecting the oil industry in Texas for years in the opinion of many oil company lawyers. An attempt may be made by a number of the large companies to obtain a rehearing of the case, and already efforts are under way to formulate a new lease which will safeguard the interests of the producing concerns, although opinions differ as to whether or not the lease form can be reworded to correct the situation. At a meeting in Fort Worth Saturday, representatives of the legal departments of several large oil companies started to work out a new lease form which could be used by them in one particular area where all of them are contemplating the purchase of new acreage, and another meeting was to be held Monday. In this case, the landowner desired to play fair and wanted an "air-tight" lease as much as the companies did.

The effects of this ruling extend to all parts of Texas and into practically all ramifications of the producing industry in the state. The most serious feature of it is that it places in the hands of a jury of 12 men, selected by chance and with no technical knowledge of the oil business, the power to judge whether or not the development of a property has been exercised with "reasonable diligence." Some companies have already refused to buy any more acreage on the regular lease form and in the opin-

(Continued on Page 141)

Marked Progress in Standardization

Conference in Colorado Springs Resulted in Completing Some Important Sections of the General Program

By Special Correspondent

COLORADO SPRINGS, Colo., June 18.—The American Petroleum Institute standardization conference, which closed here today after a four-day session resulted in marked progress in the work of the standardization committees. The work has progressed to the point where actual results are being obtained and some advancement was made in every section on the general program. The standardization of cable drilling tool joints, oil country tubular goods and rig irons was developed to a degree that was most gratifying, and the committee on wire lines and manila cordage came through with complete tentative specifications on three grades of wire line material and progress was made in the matter of manila cordage.

The meetings were well attended. Progress is slowly but surely being made to accomplish the results hoped for in the standardization program. It was decided by the general committee that sufficient specifications had not been completed to warrant the issuing of an A. P. I. handbook on standards, which will be made available to the public at cost. In this way it is hoped that a wider circulation may be obtained among the field and drilling and production staffs, so that a more intimate knowledge can be had of the work of the various A. P. I. standardization committees.

The work of these standardization committees is but one of the efforts of the oil industry to solve within itself the problems that confront it, and is one of the evidences not only of the desire but of the ability of the industry to accomplish these things within itself.

Following is a result of the work done at the conference:

Belting

Following the report of the Belting Committee at Los Angeles, additional tests have been made, resulting in several modifications to the tentative specifications adopted at Los Angeles. These specifications are not yet complete. The fatigue test is yet to be developed, and research work is necessary on the type of belt fasteners. Printed copies of the tentative A. P. I. specifications on the various grades of belting should be available in the near future.

Boilers

The proof copies of the boiler specifications were reviewed in detail and practically approved. Further revisions were made in the specifications which had been prepared as a result of the Los Angeles conference, and there is still to be settled the question of the size of the hand holes. However, these points are expected to be settled in the near future and the printed specifications ready for circulation and use.

Cable Drilling Tool Joints

The completion of A. P. I. grand master and reference master gauges, as well as the completion of the necessary gauges of the various manufacturers of standard A. P. I. cable drilling tool joints, is one of the outstanding accomplishments reported at the Colorado Springs conference. The original group order, which was commenced over a year and a half ago has been completed and the gauges delivered. The A. P. I. grand master and reference master gauges will soon be in the hands of the Bureau of Standards in Washington and the custodians appointed by the Institute. These custodians are as follows: Eastern district, Pittsburgh Testing Laboratories, Pittsburgh, Pa.; Mid-Continent district, Petroleum Experimental Station, Bureau of Mines, Bartlesville, Okla.; Pacific Coast district, Smith Emery Co., Los Angeles, Calif.

The A. P. I. specification on cable drilling tool joints has been revised to take care of the new conditions imposed by the completion of these gauges and will soon be ready for circulation. It was announced by the chairman of this committee that cable tools with A. P. I. standard joints should be available to the trade within the next 90 days. A gauge table has also been prepared which will permit the duplication of these various gauges should the grand master or reference master be lost or destroyed.

Standard Rigs and Derricks

The work of this committee is now complete, with the exception of two unfinished itsems as follows: The classifications of derricks with reference to capacity, and standardization of common foundations of derricks of equal heights. A standard uniform opening through the water table has been adopted, as well as the heights and other dimensions relating to standard rigs. It is expected that at the Tulsa meeting final specifications for all types of derricks will be ready for presentation and adoption.

Oil Country Tubular Goods

As a result of the specifications already issued on casing and the actual manufacture of A. P. I. tubular material by the various mills, certain modifications were found to be necessary in the A. P. I. pipe specifications. These modifications are not serious, and it is expected that a revised A. P. I. pipe specification will be issued shortly by the Institute.

The specifications on drill pipe are practically complete, likewise on tubing. Three additional sizes of tubing have been added to the original specifications adopted at Los Angeles, as follows: 1¼-inch, 1½-inch and possibly 4-inch. As soon as the necessary information on these three sizes can be developed, it is expected that complete specifications will be issued.

One of the outstanding developments of the Colorado Springs conference was the adoption of an entirely new type of gauge and gauging practice. The National Tube Co., after considerable research and experimental work, has developed a type of gauge wherein the pipe is maintained as standard. In addition to adopting a definite type of gauge, gauging methods were also adopted for casing, tubing and drill pipe. Details of the types of gauges and gauging methods should be made available within the near future.

The gauges that have already been purchased by the various manufacturers will not become obsolete by the adoption of new type gauges and gauging methods. Complete information on the subject is

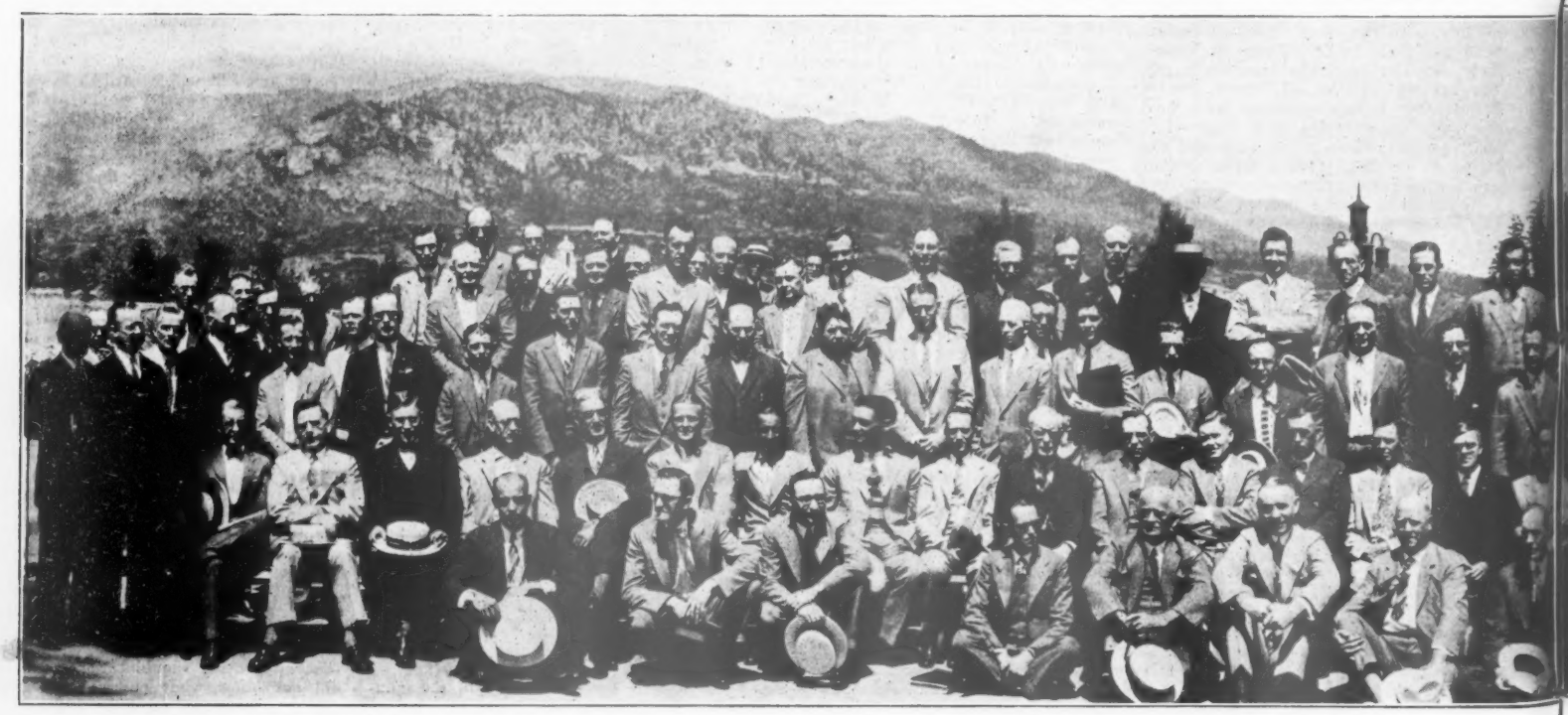
OFFER STILL OPEN

The copyrighted picture of oil and gas men and supply men present at the semiannual conference of the special committees of the American Petroleum Institute on the standardization of oil field equipment, was taken on the grounds of the Broadmoor Hotel, Colorado Springs, Colo.,

It was announced that each one present would be given a copy of the photograph with the compliments of The Oil and Gas Journal, and most of those in the picture availed themselves of the opportunity of obtaining the photograph before they left Colorado Springs.

To the few who forgot to obtain a 7x31-inch photograph of the group of oil and equipment men at the Colorado Springs meeting last week with the compliments of The Oil and Gas Journal, we wish to say that the offer is still open, and the photograph may be had free upon application by mail or in person to The Oil and Gas Journal, Tulsa, Okla. The photograph was taken exclusively for The Oil and Gas Journal and was the only large picture "shot" on that occasion.

GROUP PICTURE OF OIL AND GAS MEN AND SUPPLY MEN PRESENT AT THE SEMIANNUAL CONFERENCE OF SPECIAL CO



now being developed and will be circulated in the near future.

Rig Irons

The additions and modifications adopted at Los Angeles were ratified. These modifications are principally a new size of crank shaft, pitman stirrup and sand reel. It was also moved that some slight changes in the size of keys be made in the completed specifications, these changes in keys, however, to be subject to ratification by the various manufacturers who have been licensed to use the monogram on rig irons. No changes were made in the tolerances on shafting.

It is expected that a revised rig iron specification, including the additions and modifications adopted at Los Angeles and Colorado Springs, will be issued by the Institute as soon as practicable.

Rotary Drilling Equipment

The tentative specifications on dimensional standards for transmission, rotary line shafts and miscellaneous standards were approved, subject to the approval of a special subcommittee appointed for the purpose of reviewing and completing certain minor details. The specifications on chain and sprocket tooth form are practically completed and should soon be available to the various manufacturers.

On the question of taper joints for rotary drilling it was decided by the committee to adopt the V type form of thread in place of the modified Acme type heretofore proposed. The adoption of the V type thread brings up the question of the relationship of fish tail bits, drill collar and grief stem and swivel connections. A special committee has been appointed to submit detailed recommendations on taper joints, V type, for all necessary sizes. It is hoped that these recommendations will be ready for complete review at the next annual meeting of the A. P. I.

Wire Lines and Manila Cordage

Complete tentative specifications on wire line have been unanimously accepted for three grades of material, formerly known in the trade as plow steel, extra strong cast steel and cast steel. Specifications are also included for galvanized guy wire strand.

The question of the adoption of specifications on wire line is probably one of the most difficult projects under consideration by the Institute. A research committee has been appointed and special research funds appropriated for the purpose of conducting laboratory and field tests for the purpose of developing a type of wire rope best suited for oil country work. This research committee is composed of representatives of the users and the manufacturers, as well as other qualified technical representatives, who are working together harmoniously to the end that a specification will eventually be adopted which will give to the oil industry a uniform type and grade of wire rope, and best suited for the various requirements that obtain in the oil industry. These specifications will be issued as tentative, in the hope that the users will produce their wire rope in accordance therewith. This is highly important, for the reason that additional information must be ascertained before final specifications can ultimately be adopted.

Very slight changes were made in the manila cordage specifications, due to the fact that certain fundamental tests now being conducted on manila fibre are not yet completed. However, a definite recommendation was made on an improved form of groove for sheaves, which should insure longer life on manila cordage used in the oil country.

Pumping Equipment

This committee has completed three definite specifications as follows: Tubing, reference to which has already been made under "Oil Country Tubular Goods;" Sucker Rods: A report on sucker rods is complete. This report is the result of intensive research work. The only remaining item on sucker rods to be completed is the type of gauge to be used for checking the product. As soon as these details are completed, the sucker rod report should be available for general circulation. Working Barrels: This report is completed, and as soon as practicable will be put in printed form for general circulation.

In addition to the above completions, the committee is still working on the standardization of working barrel pump parts, as well as gas engines. It is expected that a complete report on these items will be ready for presentation at the next annual meeting of the Institute.

Steel Storage and Production Tanks

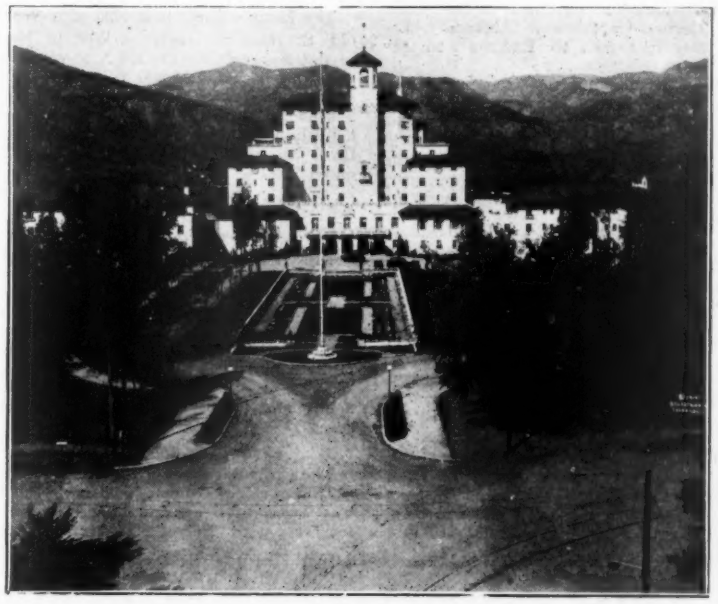
This committee has completed a nation-wide canvass on large steel production tanks, and as a result of this survey a tentative specification has been drafted and will be circulated to the various district committees in the near future. Definite recommendations were made upon the sizes of tanks, sizes of sheets, methods of riveting, etc. On the question of small field storage production tanks, insufficient information was available to make tentative recommendations, but a questionnaire is being prepared for the purpose of developing more complete information.

STANDARDIZATION PROGRAM MADE ROOM FOR RECREATIVE PLEASURES

COLORADO SPRINGS, Colo., June 18.—The 160 members of the special committees on standardization of oil field equipment who attended the American Petroleum Institute's special session on standardization at the Broadmoor Hotel last week did not spend all their time on hard work.

The four-day session, which began Tuesday, June 15, was the busiest and most fruitful of results of any of the many sessions held thus far on the great question of standardization or better utilization, but the committee in charge of the meeting provided some play with the work and the Broadmoor Hotel had plenty of provision for recreation.

The Broadmoor Hotel has a polo ground, a wonderful 18-hole golf course, outdoor and indoor swimming pools and tennis and racquet courts and its natural surroundings gave the mountain climbers and lovers of long hikes the chance of their lives to indulge in their favorite pastime.



The Broadmoor Hotel, Colorado Springs, where the meeting of the A. P. I. Standardization Committees was held. While the conference on standardization was a serious affair, the program committee wisely provided for some recreation, and the facilities at the Broadmoor made it easy to provide entertainment for the visiting oil men and supply men.

The golf course, perhaps, was given the biggest play of all the outdoor attractions open to Broadmoor guests. The course is of the sportiest and it would be unkind to mention by name the players in the first flight on the last day of the

(Continued on Page 141)

COMMITTEES OF THE AMERICAN PETROLEUM INSTITUTE ON THE STANDARDIZATION OF OIL FIELD EQUIPMENT

Photograph copyrighted by The Oil and Gas Journal.

Present Conditions in Monroe Field

Largest Natural Gas Area in World Has Potential Recoverable Capacity of 2,100 Billion Cubic Feet. Carbon Black Industry As It Is Today

By James H. Dameron

SHREVEPORT, La., June 19.—Lying in a low, flat and densely wooded country in the northeastern section of Louisiana is the largest natural gas field in the world. Not only is the field the largest in area but it also is the largest in production and probably the richest field of its kind. A conservative estimate places its monthly financial returns to the operators at more than $1,225,000.

Dotted with hundreds of red-painted well connections that cannot be seen in panoramic view unless one is high in the air, the vast field spreads over 325 square miles of proven territory embracing the parishes of Ouachita, Moorehouse and Union. Situated on the banks of the Ouachita River is the city of Monroe after which the field was named. It is the headquarters for most of the companies operating in that field. Nearby are the few industrial concerns located there because of the transportation facilities and the abundant and cheap fuel supply.

Monroe's open flow capacity on May 10 was more than 3,000,000,000 feet of gas, from 406 wells, according to figures of Capt. R. P. Webb, head of the Monroe office of the Louisiana Department of Conservation. However, only 300,000,000 feet of that amount goes to the manufacturers of carbon black. The remaining 25,000,000 feet is consumed by industrial and domestic users.

Has 2,100 Billion Feet

The field has a potential recoverable capacity stored in the giant underground reservoir estimated to be more than 2,100,000,000,000 feet of gas. The estimate was made by H. W. Bell, Pure Oil Co. petroleum engineer, formerly head of the minerals division of the Louisiana Department of Conservation. His estimate was made after years of study of the field and his report is substantiated by veteran operators of the field who predict Monroe will have twice as many wells when it is fully developed, as it has now. Mr. Bell's esimate allowed for wastage and at the same time he estimated 268,000,000,000 feet of gas after an active life of eight years.

The bulk of the production goes to feed the carbon black plants scattered over the field. At one time approximately 500,000,000 feet of gas was being consumed daily by the carbon black manufactured. More than two-thirds of the world's supply of carbon black is manufactured in Monroe and the 37 carbon plants furnish the chief revenue of the field. More than 275,000 pounds of the fluffy black product is made daily by the plants for both foreign and domestic trade.

Another source of revenue in the Monroe Field is the manufacture of gasoline. Approximately 2,100,000 gallons of Grade C natural gasoline is made monthly and 23 absorption plants are in continuous operation and another is being built.

Practically all of the Grade C natural gasoline made in the Louisiana-Arkansas territory comes from the Monroe Field and most of the supply is contracted for by the refineries in the district.

All of the gas extracted daily is not treated for gasoline because in some sections of the field the gasoline content of the gas is too low to justify. The law requires the gasoline be extracted when it runs as high as 150 gallons per 1,000,000 feet.

What little of the daily output goes to commercial production is absorbed by industrial concerns around Monroe and by those drawing gas from the Southern Carbon Co.'s line to Alexander, La. Another line goes to Bastrop and the fourth to Collinston.

When the Southern Carbon Co.'s line was built to Alexander, it was, by a piece of good luck, laid through what is now the heart of the new Urania oil field in LaSalle Parish. Practically all of the fuel supplied that field for drilling operations comes from the line running through there.

First Big Trunk Line

After years filled with rumors that the gas was to be piped to large cities, the first big trunk line out of the Monroe Field is now in course of construction. The line is a 22-inch O. D. line and is being constructed by Ford, Bacon & Davis, Inc. It will be 170 miles long and is being built primarily to supply gas to the refinery of the Standard Oil Co. of Louisiana at Baton Rouge.

Where there is a large volume of gas there is oil, is the contention of many operators but thus far Monroe has shattered that theory. Numerous tests, one drilled to the 4,000-foot level, have been drilled in the field but no oil has been found.

The Monroe Field is almost nine years old, the first well being drilled in 1909 in the Monroe City Park. A showing of gas was found at 1,300 feet and 1,500 and the well was drilled into salt water and abandoned. Several other tests were drilled in and around the city but they fared no better. In 1913 the Consolidated Ice Co. drilled a hole to 3,240 feet in the city limits and got a big batch of salt water with a little gas.

The discovery well was not drilled until 1916. It was drilled in Section 3-20-5 and reached the gas rock at 2,275 feet with a fair showing of gas but the hole was drilled on down to 2,902 feet in a futile search for oil and was abandoned in 1917. Three other wells were drilled in 1916 and all found gas when the gas rock was reached. The year after the field operations grew and the field started spreading.

Drilling Problems

The average cost of drilling a well and putting on gas connections is $17,000. The average time of drilling a well is from three to four weeks, barring accidents. The usual procedure in drilling wells now is to set surface casing at 200 feet, mud off the three salt water flows between 300 and 800 feet, cement 8-inch casing between 900 and 1,000 feet, mud off salt water flows between 1,200 and 1,750 feet and set 6-inch casing on top of the gas rock found around 2,075 to 2,200 feet.

Improved drilling methods have served to check the water menace, the arch enemy of both oil and gas fields. All wells are drilled with rotary equipment. Some operators prefer to drill the cement plug and the gas rock with roller bits to save time in completing a well. When this method is used a liberal supply of heavy mud is pumped into the hole. Others prefer the slower and surer method as a result of using a roller bit in drilling in, even when high rock pressure was encountered.

Every well in the field is gauged quarterly by agents of the State Conservation Department who keep an accurate check on the field's condition. Operators are co-operating heartily to produce the field in harmony with existing laws and conservation principals.

Most of the operators are drilling one well to the 40 acres while others are drilling one to each 80. On all wells spudded after June 24, 1924, the following schedule applying to production was made effective.

Allotted Acreage	Per Ct. Open Flow Capacity
160	24
80	21
40	18
20	15
10	12
5	9
Less than 5	7

Wells that were spudded in before June 24, 1924, can produce 20 per cent of their open flow capacity regardless of acreage and direct offsets to such wells are allowed the same. For wells whose open flow capacity does not exceed 1,000,000 feet operators are allowed to produce all the gas providing the well holds at least one-half the rock pressure as working pressure and in no case lowers working pressure below 200 pounds.

The Southern Carbon Co. is by far the largest producer and operator in the field with 101 wells. Recently the Southern company purchased The Texas Company's interests in the Monroe Field when The Texas Company started disposing of its gas holdings. The purchase of The Texas Company's property gave the Southern company many thousands of acres of undeveloped property and almost two-score gas wells.

The largest producing well in the field today is owned by the Natural Gas & Producing Co. It has an open flow capacity of 50,000,000 feet.

In the opinion of veteran operators in the field future development will be slow and many years will pass before the field is fully developed.

The Carbon Black Industry

Surrounded by tall, smutty-topped trees around clearings in the gas field are numerous little red tin houses from which a lazy gray smoke finds its way skyward.

Inside the houses is a steady burning gas fire making a product necessary in the manufacture of automobile tires, your favorite phonograph record and in some inks. Carbon black is the product and despite is griminess it is the favorite football of the oil and gas industry to be booted when other phases of the industry are out of kicking distance.

The carbon black industry is the principal revenue producer for the operators in the Monroe Field with its billions of feet of natural gas stored in its vast reservoir. Along with the gasoline plants

(Continued on Page 142)

H. G. JAMES, SECRETARY A. O. M. A., DIES SUDDENLY IN CHICAGO HOTEL

Friends throughout the industry were shocked to learn of the sudden death Saturday of Horace Greeley James, secretary of the American Oil Men's Association. His death occurred late Saturday afternoon at the Congress Hotel, Chicago, from heart trouble. Funeral services were held Wednesday at Bradford, Pa., his former home.

Mr. James had been in ill health for the past two months although his condition was never considered serious. He recently took a vacation from active association work spending his time at his home in Kansas. His health improved and last week he returned to his Chicago office. On Thursday he issued the regular weekly bulletin of the association. He was planning on spending the week-end with some Chicago friends when his death occurred.

Mr. James' connection with the oil business as a writer, association secretary and active participation in all branches of the industry covered a period of approximately 40 years. As a young man he was first employed by the Oil City Derrick. Later he was connected with the Bradford Era and Bradford Evening Star, being editor of the latter publication for a number of years. He was also general manager of the Los Angeles Herald for a time.

He entered the Mid-Continent Field when he became owner and publisher of the Independence (Kans.) Reporter. This daily publication under his direction became widely known as an authority on Mid-Continent oil field developments. In 1914 he was employed as the first secretary of the Western Petroleum Refiners Association. He rendered notable service for the association and the industry in this capacity during the period of the World War. He served as secretary until 1917 and then was president for one year. He returned to the association in 1921 in the capacity of secretary.

Mr. James was editor of an oil trade publication in Kansas City, Mo., during 1922 and 1923. He became secretary of the American Oil Men's Association about two years ago. In addition to his secretarial and editorial work he was connected at various times in the producing, refining and marketing branches of the industry. At the time of his death Mr. James was also president of the Missouri Oil Men's Association.

Probably the outstanding contribution of Mr. James to the industry lay in his constant effort to promote good will and confidence among individuals actively engaged in the oil business. It was his belief that most of the ills of the business were due to unwarranted mistrust and suspicion of each other by companies and individuals. In his writings he stressed the benefits of friendly co-operation and his success in association work was largely due to his ability to bring this about. As the representative of the independent units of the industry he took an active part in the organization of the American Petroleum Institute, and was on its first and on subsequent boards of directors.

Horace G. James

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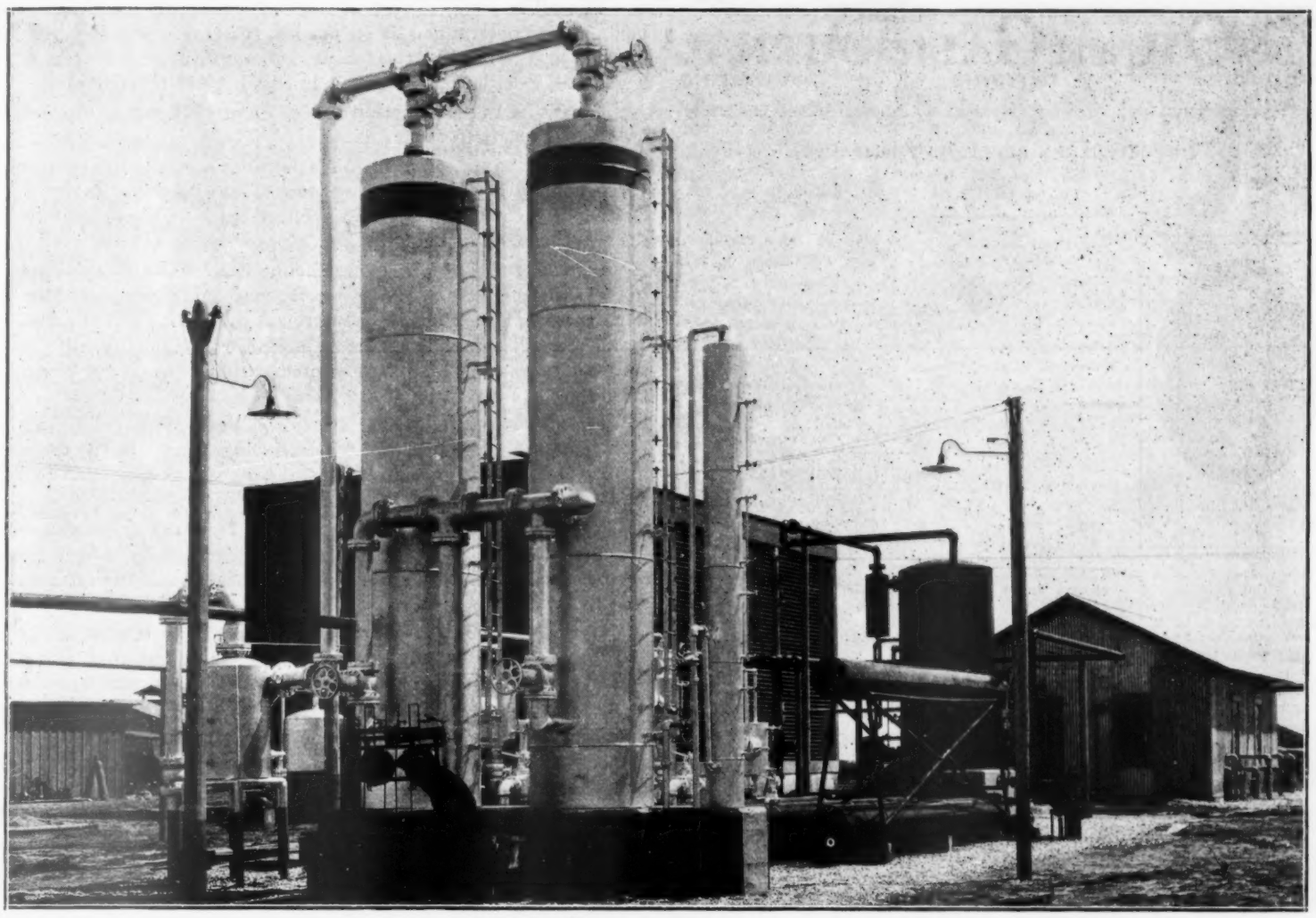

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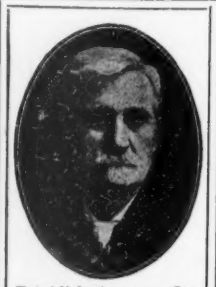

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OIL INDUSTRY SETS EXAMPLE

In all this discussion at Washington about having the Government help the farmer market his crops it is curious that no mention has been made of how the oil industry has solved a similar problem without asking a cent from either nation or state.

For years this proposition of stabilizing farm products has been the plague of the politicians. Innumerable schemes have been hatched and urged upon Congress without finding a solution. The favorite suggestion has been that the Government should get behind some sort of warehousing system that would take the farmer's crops off his hands or guarantee him a fixed price for his products.

The Haugen bill and its substitutes now before Congress proposed to relieve the farmer by having the Government finance cooperative associations and other dealers who would purchase, store or export the surplus stocks of wheat, corn, cotton and live stock beyond the demand for home consumption.

This exported surplus was to be sold abroad at world prices in contrast to the higher prices at home and this loss was to be reimbursed first by the Federal treasury and repaid from an equalization fee to be collected on these commodities sold by farmers.

Actually, of course, this would amount to Government subsidy or price-fixing, supposed to be so abhorrent in any other case. The American consumer would have to pay higher prices for his food while our less paid competitors abroad were given the benefit of lower prices on American foodstuffs.

Another phase stressed by Secretary Mellon in his opposition to the bill was the economic fact that higher prices would stimulate production and bring about a larger surplus, increasing rather than lessening the farm problem.

In other words, governmental price fixing for the advantage of the farmer is as impracticable as it has been shown to be in every other instance where it was thought the law of supply and demand could be repealed by legislative enactment.

In general, as Mr. Mellon pointed out, a surplus is taken care of by a decrease in production or by an increase in consumption. Farming, as he says, differs from most industries in that the output largely fixes price, whereas in manufacturing the price largely controls the output.

The oil industry shares with the farmers this disadvantage of having price determined by its output. It is even more handicapped by the fact that, unlike the farmer, its output may be increased far beyond all calculations by developments beyond its control.

What the overproduction of 1923 and 1924 did to the oil industry has not been forgotten.

But even in the midst of the depression in the industry in those years nobody at Washington proposed any measure to have the Government come to the relief of this essential industry upon which the whole nation depends for motive power.

Instead, the oil industry was being attacked on every side both in Washington and in the states. It was being denounced in the Senate, investigated by the Department of Justice and the Federal Trade Commission and assailed by legislatures and forced to meet state and city competition conducted without regard for costs and subsidized from taxation.

Where the plight of the farmer was being deplored from platform and press the oil industry, suffering from exactly the same misfortune, was being pictured as all that was evil, no man in public life even daring to defend it.

Yet the oil industry, asking nothing from the Government but freedom to solve its own problems, went on calmly about its own business and is emerging from its difficulties, while the farmers are still following the political will-o'-the-wisp of Federal aid.

If the statesmen at Washington who are pretending to assist the farmers would study the oil industry's operations, instead of wasting time criticising what they do not take the trouble to understand, they might be able to deal intelligently with the farm problem.

As a matter of fact and record, the oil industry has been doing for itself for years just what the farmers have been asking the Government to do for them at public expense.

When an oil producer gets production the operations of the industry, evolved not from theory but from years of practical experience, are prepared to take care of the situation. The pipe line companies and the purchasing companies are ready to function.

The producer disposes of his oil and gets the market price determined by the current supply and demand. If there is too much oil being produced the price naturally falls and the producers limit their operations accordingly. If there is likelihood of being a decline in production the price rises and the producers resume operations, as at present.

The point is that the industry is organized to take care of production and through the availability of pipelines and the readiness of purchasing companies to buy and store the oil at the market the producer is protected and guided in his operations.

And instead of having to pay higher prices as would be the case with governmental price-fixing such as sought for the farmer, the farmers and the consumers of petroleum products generally buy the gasoline, kerosene and lubricants they need at prices set by a competitive market.

This is a very much simpler and vastly better method of dealing with production than any system of governmental price fixing and warehousing at public expense, such as is being promised the farmers.

The law of supply and demand is not interfered with but is allowed to function naturally. There is no drain on the public treasury to make good losses caused by uneconomic attempts to make water run up hill.

The public at large and the officials and lawmakers who are so ready to criticise the oil industry seem to have no conception of the value of the services rendered by the pipe line and crude oil purchasing companies in collecting and transporting the oil from the remotest areas, in assuring the producer a market for his production and in supplying stabilizing influence responsive to the fluctuations of supply and demand.

They are doing for the oil industry what the farmers want the Government to do for them but doing it in obedience to, and not in defiance of, economic law. The Haugen bill and its substitutes make it timely to call attention to this contrast and to pay honor where due.

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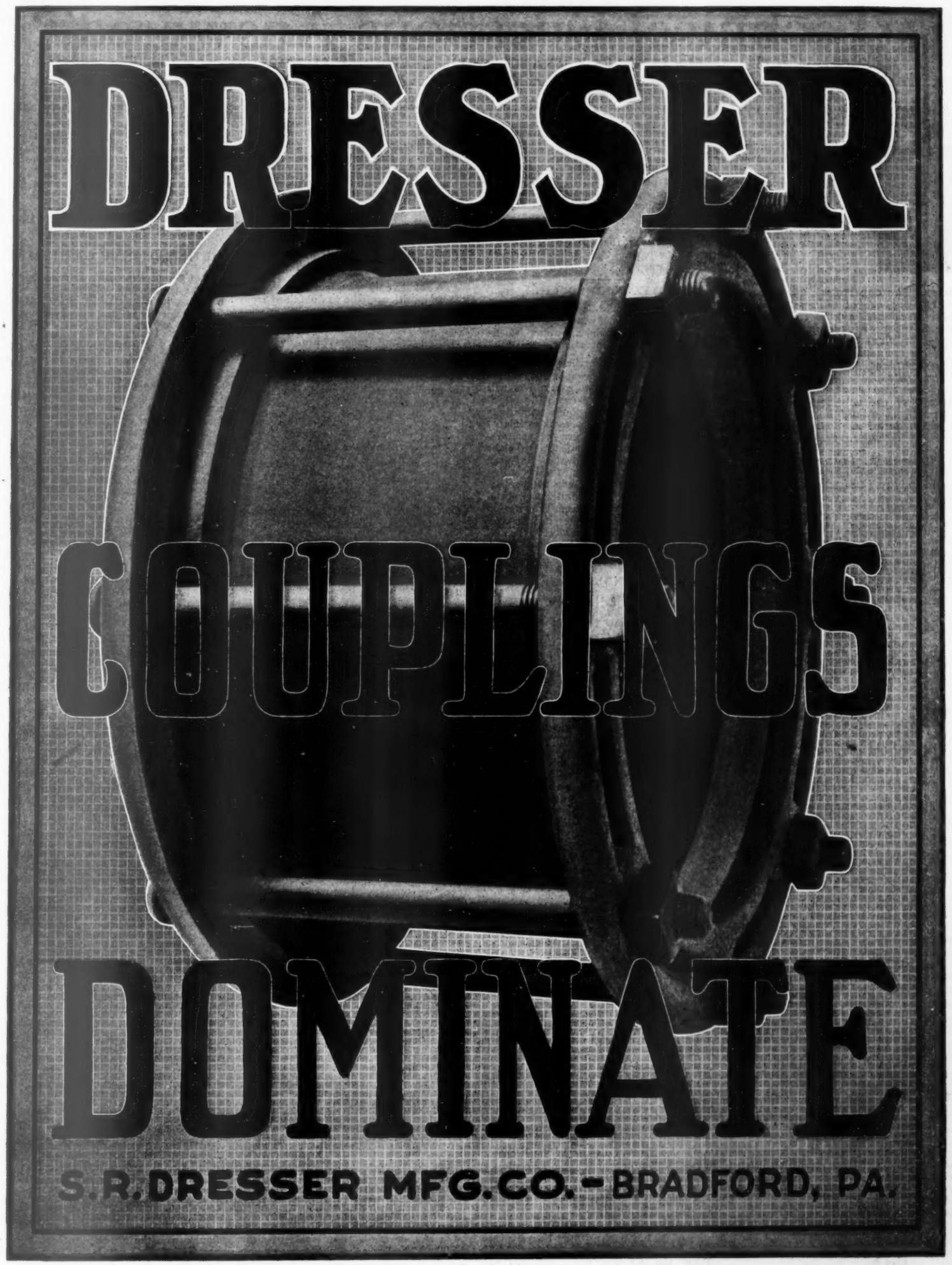
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Technical Questions Answered

By CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation.

Those connected with the marketing departments and others interested in the utilization of petroleum products are also invited to take advantage of the new service.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

BLENDING FOR GRAVITY

Calculations for mixing liquids to a definite gravity. Continued from the last issue.

Rectangle method.

Example Light Liquids. How many inches of 70 gravity gasoline should be added to a tank containing 48 inches of 52 gravity naphtha to make a blend having a gravity of 59 A.P.I.? Place 70 in the upper left hand corner and 52 in the lower, then 59 in the center. Now set down the subtraction.

70		7
	59	
52		11

Therefore 11 parts of 52 naphtha and 7 parts of 70 gasoline will produce a 59 gravity mixture. But 48 inches of 52 is equivalent to 4.36x11; then 4.36x7 equals 30.52, hence if 30.52 inches of 70 gasoline are added to the 52 naphtha, there will be produced 78.52 inches of a mixture having a gravity of 59 A.P.I. A more accurate solution of this problem may be obtained if the densities are stated in terms of specific gravities before solving.

Example Heavy Liquids. A solution having a specific gravity 1.2006 is to be mixed with one having a specific gravity 1.0684 so as to obtain a mixture with a specific gravity 1.1247

1.2006		0.0563
	1.1247	
1.0684		0.0759

Therefore, 563 parts of a liquid having a specific gravity 1.2006 when mixed with 759 quarts of a liquid of 1.0684 specific gravity, will give a mixture having a gravity of 1.1247.

Algebraic Formula Method. This method may be stated as follows:

Let a=stronger solution
b=required mixture
c=weaker solution
x=parts of c to mix with a
y=parts of a to mix with c.
Then x+y=final mixture.
ax=parts of a added to c
cy=parts of c added to a
ax+cy=parts in mixture.

Therefore $\frac{ax+cy}{x+y}=b$; $ax+cy=bx+by$

$(a-b)x=(b-c)\ y$ or $\frac{x}{y}=\frac{b-c}{a-b}$

Example Heavy Liquids. A salt solution, gravity 1.2006, is to be diluted with one having a specific gravity 1.0684 so as to give a mixture having a gravity of 1.1247

Let a=the 1.2006 solution
b=the 1.1247 solution
c=the 1.0684 solution
x=the parts of c to mix with a to give b
y=the parts of a to mix with c to give b

$(a-b)x=(b-c)y$ substituting.

$(1.2006-1.124.7)x=(1.1247-1.0684)y$,

or $.0759x+.0563y$

Therefore 759 parts of a and 563 parts of c must be mixed to give b.

If the original data are given in terms of percentage it will be necessary to reduce them to a density (specific gravity) basis before solving the problem. The result may then be converted to a percentage basis. Consult density tables for this purpose.

SPRAY POND COOLING

What space should be given to a spray pond per gallon of water sprayed and what is a reasonable allowance to be made for loss in evaporation?—E. W. V.

This varies with conditions but in a general way it may be said that under very good conditions two square feet will do and that four square feet will be necessary for good results under conditions not so favorable. This area is estimated for one gallon of water sprayed per minute against a pressure of five to eight pounds per square inch. Losses will vary with location but the large factors which should be considered include average atmospheric temperature, wind velocity and seepage. The total loss from evaporation will seldom exceed 6 per cent of the volume handled but it may be better to calculate 10 per cent for this item.

DETERMINATION OF WATER AND B. S.

We cannot read the volume of water when centrifuging out the B. S. and would like to know the best way to get the volume of water.—J. O. H.

The centrifuge is not a reliable method for determining the total quantity of water that may be present in crude oil because it is not always possible to obtain a sharp separation. When diluted with an equal quantity of benzol a much better separation may be obtained at 1,500 R.P.M. A more exact method is the distillation method of Dean and Stark. The apparatus is special, consisting of a flask from which the vapor is conducted to an upright condenser to the bottom of which is attached a calibrated trap.

The oil is placed in the flask and as the distillation proceeds the water vapor will be condensed and fall from the condenser into the trap. The trap is graduated from 0 to 10 c.c. in 0.1 c.c. divisions. The volume of condensed water as measured in the trap, when multiplied by 100 and divided by the volume of the sample used, will represent the percentage of water by volume in the oil. This is an A. S. T. M. method which is fully described in the United States Bureau of Mines Technical Paper 323-A.

HEATING VALUE KEROSENE VS. COAL

If we purchase 42 gravity kerosene at 12 cents a gallon, what will be its heating value against soft coal at $8 a ton when used in a residence furnace?—R. G. D.

Several necessary facts are missing here, but reasonable assumptions may be made.

One gallon of 42 gravity kerosene weighs 6.8 pounds and has a heat value of say 19,500 B.t.u., or 132,600 per gallon. A reasonable time for the burner to consume one gallon would be four hours. Then 132,600 heat units cost 12 cents, or 11,050 B.t.u. for 1 cent.

A good soft coal will test 12,000 B.t.u. per pound. Estimating that 1.5 tons or 3,000 pounds will last a month of 31 days, or 744 hours, we have a consumption of 16.1 pounds in four hours. This is equivalent to 193,200 (12,000 x 16.1) B.t.u. for the four hours. At $8 per ton 16.1 pounds cost 6.4 cents or 3,018 B.t.u. for 1 cent. This is on a basis of complete combustion, and as under domestic conditions the loss in ashes, etc., would be at least 20 per cent, a corresponding allowance should be made.

Under the conditions as outlined the kerosene would be 3.6 times cheaper if all the coal were burned and 4.5 times cheaper if 80 per cent of it were consumed.

COMPOSITION OF GAS FROM PRESSURE STILLS

Can you give us some idea of the chemical composition of the gas obtained from our * * * * stills?—O. S. A.

No analyses of the gas from this well-known pressure process are available, however, there can be very little difference in the composition, except that which may be due to the charging stock, from the gas obtained in another cracking process as follows:

	Per Cent by Volume
Carbon dioxide	0.5
Oxygen	0.5
Unsaturated hydrocarbons	21.6
Carbon monoxide	0.4
Hydrogen	12.1
Methane	17.1
Ethane	41.8
Nitrogen	6.0

COMBUSTION VALUE OF CARBON DIOXIDE PERCENTAGE

Our recorders indicate around 10 per cent, at the highest, for CO_2 from the furnaces burning natural gas and wish to ask is this showing good combustion conditions?—M. W. Y.

If it is assumed that the natural gas is normal, this seems to show a very good condition. All CO_2 recorders should be checked by chemical analysis frequently enough to be assured of their being in good condition. It is a common mistake to base the quantity of carbon dioxide to be expected in a flue gas on results which have been obtained with coal. The quantity of carbon in coal is so much more than is found in the equal weight of gas that there must be more CO_2 in the gas from coal than from natural gas. The quantity of air admitted to the furnace controls the formation of CO_2 and this may vary from an excess of zero to several hundred per cent, producing a corresponding quantity of carbon dioxide. Coal may give a flue gas containing about 20 per cent CO_2 with no excess air, while ordinarily natural gas under the same condition would produce 12 per cent. Checking your results, it therefore appears that you have about 20 per cent excess air, or as shown by analysis about 4 per cent oxygen. You should have this condition confirmed by the additional determination of carbon monoxide.

USE OF PETROLEUM COKE

What are the chief uses made of petroleum coke?—B. D. N.

In a general way it may be said that there is but little commercial value to petroleum coke at the present time. Many refiners are making roads with it and some use it for filling in depressions, etc. This condition is due to the fact that the handling and freight charges are often too high to permit a selling profit at the prices obtainable.

It is an excellent fuel with a higher heating value than the common coals. When local conditions are favorable there is a demand for it and its use in the powdered form will no doubt increase. An increase of from 1,000 to 3,000 B.t.u. has been obtained by mixing powdered petroleum coke with powdered coal. Petroleum coke has a B.t.u. value of about 15,000. The low ash content of this coke makes it especially attractive for fuel purposes. Recently the briquetting of petroleum coke has been successfully developed and this process converts the coke into a uniform size and also prevents the tendency of petroleum coke to powder and the resulting waste.

It has been used to some extent as insulating material, and for the construction of electrodes but did not prove satisfactory for this purpose. Its main use is as a fuel.

UTILIZATION OF WASTE HEAT

Can you give me some information concerning the economy of waste heat equipment as to reduction of stack temperature, saving of fuel and increased throughput?—H. P. T.

The kind of system, furnace conditions, kind of still whether tube or shell, exposure, etc., influence this matter.

There is probably no poorer method for the distribution and consumption of heat units than the average refinery furnace and the stilling equipment; so then there is plenty of room for improvement. Some progress in a more efficient utilization of the heat has been made through the use of towers and tube stills but more attention should be given to the direct application and distribution of heat.

The handling of cold air and the circulation of the hot gases in the furnace is making great advances in fuel economy and any system which gives promise of effectively doing this is well worth investigating. The information we have indicates that the stack temperatures have been reduced 50 per cent, the fuel decreased from 5 to 60 per cent, and the charge increased in some cases as much as 30 per cent.

The control of the cold air is a valuable feature of a heat circulating system because it directly affects fuel consumption and although this detail when taken care of by sight and hand may be checked by analysis, it is certain that some automatic control of the cold air is to be desired.

Some success has been attained in the transfer of the excess heat to another furnace where more volatile liquids are heated or preheating of the charge accomplished or other supplementary use made of the heat which under other conditions would be wasted.

DETECTING CORROSION

Kindly give me the most prominent conditions for corrosion and tell me how a corrosive condition may be detected—P. D. E.

There are many substances responsible for corrosion the chief of which are air and moisture, but while these are responsible for much damage, the more active agents met with in the petroleum industry are confined to the oil and to the water. Corrosion is much slower in the presence of alkaline materials than in air and rapid when the conditions are acid. The destructive action increases with the velocity of the liquid. This is particularly true on the inside of pipe and often on the outside under bad condenser box conditions. The corrosive substances in oil and water include oxygen, acids, sodium chloride, compounds of sulphur, calcium, magnesium and silicon.

Corrosion may be detected by a positive test for hydrogen as it is evolved, especially, when acids are present. While hydrogen is often formed from alkaline solutions, it is not evolved with great rapidity under the ordinary conditions of corrosion as met with in the petroleum industry. Active corrosion is frequently detected and measured electrically because of the current passing through the liquid from the anode (rapidly corroding metal), to the cathode (slower corroding metal.)

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Ventura Avenue Field Looking Better

Associated's No. 3 Hartman Just in Making 4,000 Bbls.
Wheeler County Added to Important Panhandle Territory

Texas Panhandle production was reported at 49,716 bbls. Wheeler County was ranged with Gray, Hutchinson and Carson Counties when the Gibson Oil Corp.'s No. 3 Phillips came in flowing 50 bbls. an hour by 5-minute heads through the 6-inch hole. The Wilcox-Pampa area's three wells made 3,020 bbls.

In north Texas, general activity was reflected in good wells and extensions of pools. In Oklahoma, the Gypsy Oil Co.'s Tonkawa extensioner, making 350 bbls. an hour initially, produced 8,500 bbls. in the 24 hours ending Monday, with some salt water, and in the 24 hours ending Tuesday, 8,000 bbls. with 1,000 of salt water. Fifteen new locations had been made.

Ventura Avenue in California, looks much better than anticipated. Associated's No. 3 Hartman, just in, making 4,000 bbls. The Shell Co. had one of 4,500 bbls. and one of 3,403 bbls.

Michigan's tenth producer was completed by the Sun Oil Co. in the Saginaw Field.

Oklahoma

The Gypsy Oil Co.'s No. 1, a quarter of a mile south of the well of The Texas Company, in Tonkawa extension, topped the Wilcox at 4,270 feet and penetrated 27 feet, the same as The Texas Company well. The Gypsy well made 350 bbls. an hour initially, and in the 24 hours ending Monday had produced 8,500 bbls. and was making some water. The Gypsy well, according to the figures, is 27 feet higher structurally than the Texas well which made no water. Fifteen new locations were made following the completion of the Gypsy well.

Phillips Petroleum Co. completed a well in Burbank making 1,000 bbls. in 17 hours.

Kansas

The Roxana Petroleum Corp. had two wells in the Sumner County Field, one swabbing 750 bbls. daily and the other 255 bbls. Both are reported the outcome of core drilling along the axis of the granite ridge from the old Towanda Field to Butler County. These wells may start work on land that has long been under lease.

New Mexico

The Maljamar Oil & Gas Corp.'s No. 1 Baish, in Lea County, is spraying 50 bbls. and promises to be a good producer without a shot. This showing is thought to indicate big production may be found in the neighborhood and an active drilling campaign is promised within 60 days.

East Central Texas

The Transcontinental Co. is on top of the sand in its second test west of Mexia. Casing is being run and results should be known in a week or two.

Rocky Mountain Area

The Texas Company has begun work on its leases in the Moab district of Utah, having secured leases in the bed of the Colorado River, on the Cane Creek structure. Both the Federal and State Governments claim the rights there and a test suit has been started by The Texas Company.

Twelve producers and two dry holes were completed in the Sunburst Field of Montana, but no gushers were among the producers. Operators are centering on the southeast part of the field. Shelby tank farm is to be enlarged.

The Midwest completed nine producers in Salt Creek, one a Lakota sand well shut down without drilling in.

Louisiana-Arkansas

A general drop in new production and the failure of wildcats in both States to find anything exciting sums up the situation there. Grant and Winn Parishes in Louisiana and Union County in Arkansas are the chief scenes of activity. Smackover heavy dropped 5,500 bbls. Urania had but 900 bbls. new production. One gas well, six failures and the junking of a deep test was the record in Caddo. Lisbon and Nevada showed losses while El Dorado, Stephens and Smackover light had gains.

Central West

The Allendale Field, Wabash County, Illinois, had the best well of the week in the Central West, 120 bbls. Another in Clark County got 60 bbls. in the Niagara limestone. Indiana had an above the average well in the Princeton-Oakland City district, Pike County, 70 bbls.

California

Ventura Avenue came through with three wells totaling 9,519 bbls., two by the Shell Co., one 4,500 and the other 3,403 bbls. The General Petroleum's No. 1 Notten blew itself in, the initial output being 1,616 bbls. Several additional wells picked up the deep pay at Long Beach and four or five may be completed this week.

Associated Oil Co.'s No. 3 Hartman in the northern part of Ventura Avenue is doing 4,000 bbls. with considerable gas. This makes the area look considerably better than anticipated.

Gulf Coast

Production in the Gulf Coast pools has been declining steadily for 30 days, the past week showing a decrease of 3,795 bbls. The southwest fields increased 1,040 bbls. Part of the decrease in the Coastal pools is due to the slump at Boling Dome and to the wells in the deep sand at Spindletop failing to hold up. The best well of the week was the Gulf Production Co.'s No. 5 Hirsch in Goose Creek which came in flowing 950 bbls. by heads.

Gulf Refining Co.'s No. 39 Star, Vinton Pool, is flowing 1,500 bbls. Humble-Gulf joint's No. 13 Hawes, in Boling, is doing the same.

Michigan

Sun Oil Co.'s well on the Neurmyer farm, offsetting the North Weiss farm well in Saginaw Township, is estimated at 25 bbls. Total depth 1,822 feet.

North Texas

Good wells and extensions were reported in Brown and Callahan Counties. Deep Rock company's well in Culberson County had a good showing of oil and the Pure Oil Co. had a good gas showing in a well in the same county. A new sand was reported in the Sunshine Pool in South Wichita County. The Parsons Pool in Eastland had several fair completions. Cosden had a gas showing in Crane County. Montague County reached a new production record.

Texas Panhandle

Wheeler County joined the important producing area in the Panhandle with the Gibson Oil Corp.'s No. 3 Phillips flowing 50 bbls. hourly by heads of five minutes through the 6-inch hole. The three wells in the Wilcox-Pampa district of Gray County are making 3,020 bbls., most of it from the big No. 3 well. Some 22 new tests were located in Wheeler County following the Gibson well.

Canada

The Emerald Oils well in the Irma-Wainwright district got the oil sand at 2,242 feet. The test made the first 2,100 feet of drilling in 11 days, a record for the Alberta Field. All indications point to its being a good producer.

Mexico

Mexico had a quiet week, 8 of the 12 completions being failures. Production dropped to 2,250 bbls., of which 1,000 bbls. came from producers in the south fields. With the exception of April, May holds the record for number of completions in Mexico, having 85 wells against 86 in April.

Southwest Texas

Three wells of the Simms company featured the Laredo report during the week. No. 1 Dinn, reported last week, with a rock pressure of 620 pounds, is likely to be a bigger gas well than originally expected. It has opened a new field 5 miles north of the Cole Field. No. 1 Leydendecker, 4 miles south of the Randado Pool, may mean the opening of a new pool along the Reynosa escarpment. No. 1 well, a mile north of Randado production, had a good oil showing.

In the Cole Field Cole company's No. 26 Benavides topped the sand apparently 40 feet higher than in the Cin-Tex wells. Major interests are reported taking an interest in Medina County possibilities, a dozen or more tests going down.

Late News From the Fields

OKLAHOMA

The big well at Tonkawa is continuing to make more water. It is the Gypsy Oil Co.'s No. 1, SE cor. NE SW, Section 28-25-1w, and for the 24 hours ending Tuesday morning at 7 a. m. it produced 8,000 bbls. of oil and 1,000 bbls. of water.

In Payne County, the Reiter-Foster Oil Co.'s No. 1 Kinneman, SW cor. SW, Section 4-19-1w, made another flow of about 100 bbls. This well is estimated at 150 bbls. in its present condition. The sand record is 4,775-78 feet.

The Carter Oil Co. and Sands Petroleum Co.'s No. 1 Harnage, SE cor. SE, Section 10-8-9, made 10,000,000 feet of gas from sand at 2,825-30 feet.

The Tidal Oil Co.'s No. 1 Pahardy, NE cor. SW, Section 24-9-6, flowed 275 bbls. the first 18 hours from sand at 3,928-58 feet.

John L. Brock, Jr., and others' No. 1 Long, NW cor. NW, Section 22-8-9, had gas estimated at 5,000,000 feet in sand at 3,052-53 feet.

In Kay County, the Comar Oil Co.'s No. 1 Payne, NE cor. SW, Section 17-27-1w, had a show of oil and gas at 3,492 feet and it is thought that this well is in the Siliceous lime.

Bu-Vi-Bar Petroleum Co. has a deep failure in No. 1 Snyder, NW cor. SW, Section 28-21-2w, which is abandoned at 5,408 feet.

KANSAS

In Reno County, Hopper and others' No. 1 Stevens, NW cor. NW, Section 7-26-7w, is shut down at 4,001 feet in the Mississippi lime and will probably be abandoned.

GULF COAST

HOUSTON, Tex., June 22.—The best wells in the routine of the Gulf Coast were not completed until late in the week or early this week. In the Vinton (La.) Pool the Gulf Refining Co.'s No. 39 Star is flowing 1,500 bbls. at 3,700 feet. The Humble-Gulf joint No. 13 Hawes in the Boling Pool is making the same amouot nf oil at 3,600 feet. The Sinclair Oil & Gas Co. abandoned No. 5 Taylor there at 4,030 feet.

In the Hull Pool, the Houston Production Co. abandoned No. 6 Palmer at 2,650 feet. It is on the northeast side of the dome.

MICHIGAN

SAGINAW, Mich., June 22. — The Sun Oil Co.'s well on the Nuermyer farm, offsetting the north Weiss farm well. Section 11, Saginaw Township, Saginaw County, is estimated at 25 bbls. 8 feet in sand, total depth 1,822 feet.

CALIFORNIA

LOS ANGELES, Calif., June 22.—Associated Oil Co.'s No. 3 Hartman, in the northern part of Ventura Avenue, just in, is doing 4,000 bbls. with considerable gas. It makes this area look much better than anticipated.

750-BBL. WELL IN KENTUCKY

TOLEDO, Ohio, June 22. — Baird & Hickman's No. 1 Baker farm, Hopewell Pool, Cumberland County, Kentucky, is reported at 750 bbls. flush from a stray sand 150 feet below the Pencil Cave formation. Wood, Haislett & McClemmon's No. 2 E. H. Brockman farm, same pool, is flowing 15 bbls. an hour at 300 feet.

Mirando and Randado, in Texas, Show Batch of Good Producers

SAN ANTONIO, Tex., June 21.—New completions the past week in the Mirando Pools added about 3,000 bbls. of flush production to the field. Crown Central-Staley & Wynne's No. 2 "B" on Block 14 swabbed 400 bbls. daily, and Murchison & Fain's No. 1 on Block 13 swabbed 800 bbls., and Gibson Oil Corporation's No. 5 on Block 13 swabbed 500 bbls.

In the Randado Field Houston Gulf Gas Co.'s No. 2 came in pumping 250 bbls.; Simms' No. 5, pumping 150 bbls.; Morgan Oil Corp.'s No. 2, pumping 200 bbls.; Black, Pearson & Hudson's No. 3 on Block 13, swabbing 500 bbls., and Wheelock & Collins' No. 2 on Block 22 pumping 150 bbls., making 1,250 bbls. of new production in the Randado Field.

Kitselman & St. Albans' No. 36 in the Henne, Winch & Fariss Pool was completed pumping 100 bbls.

LATE IMPORTANT WELLS IN PANHANDLE FIELD

FORT WORTH, Tex., June 22.—J. K. Hughes' No. 2-A Kingsland, Section 6, Block 6, Hutchinson County, was shot with 90 quarts at 2,924-74 feet, 800 bbls. Relief Oil Co.'s No. 1 Smith, which made 1,600 bbls. on June 12, stopped flowing and is now cleaning out to shoot. Dixon Creek No. 1 Smith, Section 14, which made 4,500 bbls. of oil and no water on May 6, is now showing 1 per cent water. Same company's No. 2 Smith, at one time good for 250 bbls. an hour, has stopped flowing. Lucky 10 Oil Co.'s No. 1 Smith swabs 500 bbls. with 20 per cent water.

T. B. Slick's No. 1 Bond, in Callahan County, is flowing 15 bbls. hourly at 1,393-96 feet. Valley Oil Co.'s No. 1 test on Section 151, Curlong Survey, Brown County, is flowing 50 bbls. by heads from sand at 1,228-48 feet. Roeser & Pendleton's No. 6 Cook A, Section 84, north extension of the Cook Pool, is flowing 1,000 bbls. at 1,339-55 feet. The Humble Oil & Refining Co.'s No. 5 Cook is good for 350 bbls. at 1,355-75 feet.

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North Texas Field Has Good Showings

Brown and Callahan Counties Get Plenty Action. Eastland Has Fair Completions. Montague's New Record

By C. D. Lockwood
Staff Correspondent, North Central Texas

FORT WORTH, Tex., June 21.—Good wells and extensions of pools in Brown and Callahan Counties, a good showing of oil in the Deep Rock Oil Co.'s Culberson County test, a good gas showing in the Pure Oil Co.'s Quaid well, same county, a new high peak of production for Montague County, a showing of gas in J. S. Cosden's Crane County test, some fairly good completions in the Parsons Pool, south of Olden, in Eastland County, a new sand for the Sunshine Hill area of Wichita County, and a 250-bbl. well in the Thomas Pool of Archer County were a few of the high lights in North and West Texas during the past week.

Production of the district continues to do a little better than hold its own, Wilbarger County having climbed 407 bbls. over the previous week, the daily average amounting to 14,625 bbls. Young County also gained 227 bbls., having averaged 7,597 bbls., and Montague County went over the 4,000-bbl. mark with an increase of 215 bbls. to 4,193 bbls. daily. Stephens County averaged 250 bbls. better than the previous week while Shackelford declined 400 bbls. due to natural falling off of wells in the Cook Pool.

Brown and Callahan

There was a plenty of action in the Cross Cut and Cross Plains areas of Brown and Callahan Counties the past week. The Prairie Oil & Gas Co. figured largely in these activities, extending the Cross Plains townsite pool across Turkey Creek to the west with its No. 1 Cunningham, in the NE cor. of Section 73, which was good for 250 bbls. initially in sand at 1,398-1,407 feet. The same company's north offset to the Canyon Oil & Gas Co.'s big well, No. 10 McDonough, swabbed 400 bbls. at 1,392-1,401 feet. The Cunningham test is expected to be deepened, although late in the week it was still flowing 200 bbls.

The best well in Brown County was the McLester Oil Co.'s No. 3 J. Wooldridge, located 500 feet south and 175 feet east of the NW cor. of east 96 acres of the J. Wooldridge tract in the H. B. Gaines Survey, south of the original Cross Cut Pool. It was good for 600 bbls. at 1,262-75 feet. The same company's No. 1-A Wooldridge is drilling at 1,260 feet and No. 5 is rigging up.

The Dunn-Stover Pool, east of the original Cross Cut area was extended a quarter of a mile to the west by Barkley & Conway's No. 2 Allen, Juan Delgado Survey, which made 160 bbls. at 1,139-54 feet.

The Pandem Oil Corp. brought in its No. 2 Westerman on the extreme northeast edge of the Cross Cut Field for 170 bbls. at 1,251-71 feet; No. 3 was fishing tools at 750 feet and a machine was in place for No. 4. J. S. Cosden's No. 3 Williams was shot with 15 quarts and made 100 bbls. afterward in sand at 1,141-51 feet. Root's No. 2 Suttles was a 30-bbl. well after a 40-quart shot at 1,130-51 feet. The Texas Company's No. 15 Dunn, in the Dunn-Stover Pool, made 75 bbls. at 1,122-44 feet.

One of the most important wells in Brown County is in an area considerably south of the Cross Cut district. William Lester's No. 1 R. L. & M. E. Fry topped sand at 1,276 feet and bailed 8 bailers of oil. The hole caved badly and bridged 150 feet off bottom. The bridge was drilled out Sunday and a flow over the crown block resulted. Then luck turned on the owners and the thing caught fire. This seems to be getting to be almost a habit in the Brown-Eastland district, this being about the fourth wildcat to burn just as the sand is tapped. The oil in this well is light green and there is considerable gas with it. The sand has scarcely been scratched.

Eastland County

Near the Eastland County line, the Prairie Oil & Gas Co.'s No. 1 Trammel is busily engaged in fishing tools, now that the rig is completed. Under its handicap this well is not producing much oil now, having averaged around 100 bbls. last week.

In Eastland County, the Gulf Production Co.'s No. 2 Parsons "A" south of Olden, pumped 20 bbls. the first 12 hours. It had flowed 32 bbls. in 24 hours. No. 3 Parsons "A" topped sand at 1,518 feet and set 6-inch. No. 4 flowed 26 bbls. at 1,233 feet and was preparing to pump. The Eastland Oil Co.'s No. 1 Wright had sand at 1,566-76 feet, total depth 1,577 feet, and after a 20-quart shot was flowing by heads at the rate of 100 bbls. daily. The Humble Oil & Refining Co.'s No. 1 Parsons, offset to the Gulf's No. 4-A, topped sand at 1,225 feet and was drilling at 1,230 feet, making 4,000,000 feet of dry gas. The Prairie Oil & Gas Co.'s No. 1 Parsons, offset to the Gulf's No. 3-A, was shut down at 1,500 feet for 6-inch pipe. Smith and others' No. 1 Wright, was deepened to 1,450-66 feet and was flowing 100 bbls. by heads. Robert's No. 1 Reece Gullett was dry and abandoned at 1,666 feet.

Cook Ranch Limit

A slight shock was felt in the vicinity of the Cook Pool, Shackelford County, when Roeser & Pendleton's No. 5 Cook B-85 was drilled in, for it was dry at 1,340 feet. This well is a location due south of the record producer in the field which was still flowing 922 bbls Monday morning. Monday's gauge of the Roeser & Pendleton interests' six wells was 2,729 bbls. and the joint interest property with the Marland Oil Co. yielded 4,397 bbls. Roeser & Pendleton and Marland's No. A-9-85, west offset to the arid No. B-5-85, was shut down at 1,270 feet with no showing, so it seems to be evident that the Cook Pool doesn't extend to the south.

In Archer County, the Marland Oil Co.'s No. 3 Thomas swabbed 250 bbls. at 1,153½-66 feet and was preparing to pump. The Barnsdall Oil Corp.'s No. 1 Wolf had a show of oil in sand at 1,366-72½ feet, then had sandy shale at 1,372½-33 feet. There was 20 feet of oil in the hole and it was drilling ahead at 1,374 feet.

In Wichita County, Rubsam and others' No. 1 McClure had an oil sand at 1,325-37 feet estimated good for 25 bbls. This is a new sand for the Sunshine Hill district.

West Texas Showings

West Texas was kept on edge during the past week with reports of several good showings. The Deep Rock Oil Co.'s No. 1 Kloh & Rumsey, in Culberson County, had a good show at 1,570 feet and bailed 35 bbls. of 37 gravity oil. The hole was making 1½ bailers of water per hour at 1,370 feet and the well was shut down to ream the 10-inch. It was thought to be parted but when pulled was found to be all right. In the same county, the Pure Oil Co.'s No. 1 Mrs. G. H. Quaid had 100,000 feet of gas at 4,080 feet.

Near the north line of Crockett County, William Schaffer and others' No. 1 University was making about 1 bbl. of oil daily from pay topped at 2,150 feet and drilled to 2,191 feet and preparations were being made to shoot it Monday afternoon. In the Powell Field, Crockett County, the J. K. Hughes Development Co.'s No. 1 Powell pumped 250 bbls. at 2,659 feet and the Humble Oil & Refining Co. also brought in No. 7 Powell at 2,660-65 feet but no gauge was available.

In Pecos County, Levi Smith and others abandoned their No. 1 Devlin as dry at 1,312 feet.

Archer County Completions

L. T. Burns' No. 8 A. P. Jackson, NE cor. Lot 10, W. B. Aldridge Survey, was dry and abandoned at 1,581 feet. E. E. Clair and the Camp Oil & Gas Co.'s No. 2 A. D. Thompson was dry and plugged at 1,585 feet. Magnolia Petroleum Co.'s No. 5 May Rutty made 21 bbls. at 891-94 feet. McCarty Oil Co.'s No. 1 School Land, SW cor. Section 2, H. & T. C. Survey, A-1,278, was good for 80 bbls. at 1,574-90 feet. No. 29 L. F. Wilson "B," E. Hall Survey, was a 15-bbl. well at 899-905 feet. J. S. Barbee's No. 1 Lester, Section 2,451, T. E. & L. Survey, was dry and abandoned at 1,540 feet. Continental Oil Co.'s No. 6 Rogers "A," N half Section 2,407, same survey, was good for 50 bbls. at 1,360-66 feet. Flowers & Winters' No. 1 McCarty, C. Brown Survey, A-20, was a duster at 1,452 feet. Hines and others' No. 1 Anderson "B," SE cor. Section 18, South Anderson Ranch subdivision, was a failure and plugged at 1,502 feet. Maer & Staniforth's No. 2 Meade Estate, SE of Section 40, "LM" Pasture, made 44 bbls. from sand at 1,432-51 feet. Magnolia Petroleum Co.'s No. 2 Lauster, Section 1,237, S. P. Survey, was dry and abandoned at 2,371 feet. Murchison & Fain's No. 2 Richardson, SW cor. Lot 11, Thomas McCoy Survey, was a failure at 1,260 feet. E. A. Reilly's No. 1 Wilhelm, Section 94, Block 4 Clark & Plumb Survey, was also a duster at 1,406 feet. Smith Oil Co.'s No. 4 Cowan Estate "A," NE SW of Section 50, Jefferson County School Lands, A-240, was good for only 6 bbls. at 1,096-1,101 feet. The Texas Company's No. 4 Prideaux was a 4-bbl. well at 629-31 feet. Gulf Production Co.'s No. 8 B. R. Jeske made 82 bbls. from oil sand at 1,176 feet, total depth; No. 40 A. P. Nichols was good for 47½ bbls. on the pump at 1,558 feet.

Clay County

Winnipeg Oil Co.'s No. 2 Waggoner, E half K. McKenzie Survey, A-328, was a failure at 1,850 feet. Cowboy Oil Co.'s No. 1 Warren Estate was also dry and abandoned at 2,012 feet.

Montague County

Benton Woods and others' No. 8 Hinds, SW cor. their lease in J. J. Wall Survey, made 40 bbls. at 906-18 feet. Humble Oil & Refining Co.'s No. 3 Hinds, same survey, was a 70-bbl. producer at 925-41 feet. Same company's No. 5 Hinds made 75 bbls. at 896-904 feet. Pure Oil Co.'s No. 6 J. W. Maddox, in the S. H. Arnold Survey, was an 8-bbl. pumper at 930-66 feet. The Texas Company's No. 8 I. A. Gist "A," in the William Donoho Survey, made 132 bbls. at 867-92 feet.

Jack County

Scott and others' No. 1 Carter, SE cor. N half of Section 3,305, T. E. & L. Survey, was dry and abandoned at 615 feet.

Young County

Atlantic Oil Producing Co.'s No. 4 Rachuig "B," Section 4, B. B. B. & C Survey, A-1,838, swabbed and flowed 430 bbls. at 1,149-54 feet. Barkley and others' No. 2 Earl Rogers swabbed 70 bbls. at 866-74 feet and No. 3 swabbed at the

(Continued from Page 144)

WHEELER COUNTY FOLLOWS GRAY INTO PANHANDLE PRODUCING AREA

By C. D. Lockwood

Every county in the entire Panhandle now seems bent on acquiring for itself part of the publicity that Hutchinson and Carson have been enjoying all by themselves during the past few months. Just when all eyes were focused on the district northwest of the big producing area in Hutchinson County, the Wilcox-Pampa Pool dramatically flourished a 3,000-bbl. gusher and Gray County was admitted to the illuminated circle. The three wells on the Wilcox-Pampa Oil Co.'s lease, by the way, averaged 3,020 bbls. daily during the past week, nearly all of which came from the big well, No. 3. Then, amidst the noise and clamor attending the staking of locations and building of rigs for 22 new tests in that area, another county was heard from this week, being Wheeler County, where the Gibson Oil Corp.'s No. 3 Phillips, in Section 41, Block 24, H. & G. N. Survey, was reported to be flowing 50 bbls. hourly after deepening a foot to total depth of 2,265 feet. It was flowing hourly by heads of five minutes duration, the flows coming through a 6-inch hole and hitting the crown block. There were no tank connections. In the same county, the Midwest Exploration Co.'s No. 1 Shelton, Section 21, Block A-8, H. & G. N. Survey, was drilled in one foot at 2,038-39 feet and was spraying oil. Efforts were being made to set the 8-inch at 2,038 feet.

Hutchinson County

Hutchinson County news this week was, as usual, a combination of bullish and bearish information. Some good producers were brought in, the best having been Riley & Holmes' No. 1 Smith in Section 11, Block Y, which flowed 1,500 bbls. from lime pay at 2,689-2,704 feet. The owners expect to drill this well about 10 feet deeper. The Derby Oil Co. also completed a good one in their No. 1 Johnson, Tract 8, Mary Whitley Survey. It was shot with 40 quarts at 2,965-78½ feet and responded with 1,100 bbls. the next 24 hours. The McMan Oil Co.'s No. 1 Smith (or Holmes) in Section 5, Block Y, was shot with 160 quarts and made 500 bbls., the shot having been placed at 2,707-55 feet. The same company's No. 4 in the same section was a recent completion making 350 bbls. after a shot of 150 quarts at 2,737-81 feet. The Phillips Petroleum Co. and Coble Oil Co.'s No. 3 Whittenburg, in Section 13, Block Y, was also good for 550 bbls., estimated, following a shot of 100 quarts at 2,902-53 feet. The Phillips Petroleum Co.'s No. 1 Johnson-Finklea, in the Mary Whitley Survey, SE cor. Tract 6, was given a 30-quart shot at 2,962-82 feet and made 685 bbls. afterward.

It is a well-known fact that initial production gauges do not tell much of a story in some cases, and the Hutchinson County Field offers two good examples of this in the current reports. The Lucky 10 Oil Co.'s No. 1 H. E. Smith in Section 11, Block Y, which was flowing 440 bbls. an hour with 2 per cent water on May 26 following a 360-quart shot at 2,763-2,880 feet, was

(Continued on Page 145)

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Three at Ventura Avenue 9,519 Bbls.

Shell's No. 20 Gosnell Makes 3,403 Bbls. and No. 5 Edison 4,500 Bbls. No. 10 Notten of General Pet. Blows Itself In

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 19.—The Shell and General Petroleum have just closed an unusually busy week in the Ventura Avenue Field, due to the completion of three new wells with a combined initial daily production of 9,519 bbls. The Shell topped the list with two new producers, No. 20 Gosnell and No. 5 Edison. The former was the first to come into production, the initial daily output being 3,403 bbls. of clean 30.7 gravity oil and 3,000,000 feet of gas from 5,699 feet. No. 5 Edison, one of the few wells in this district which operators have been able to properly complete in the deep zone with an oil string landed and all connections made, is flowing 4,500 bbls. of clean 29.6 gravity oil and 2,000,000 feet of wet gas from 5,790 feet. The Shell's next completion in this field will probably be No. 21 Gosnell, which is drilling ahead in the oil sand at 5,561 feet, although No. 8-A on the same lease may precede it into production. The former is scheduled to be finished within two weeks, during which time the company will start work on two new wells, Nos. 23 and 24.

The heavy gas pressure characteristic of this field has nearly always resulted in new wells blowing themselves in before they have been finished, often with drill pipe still in the hole and in one or two instances with no protective pipe except a water string. The General Petroleum's No. 10 Notten is a good illustration inasmuch as this well has just blown itself in with 940 feet of 3-inch drill pipe frozen a short distance off bottom. Notwithstanding this handicap, it nevertheless registered a fairly good production, the initial output being 1,616 bbls. of 29.4 gravity oil daily from 5,481 feet. The General Petroleum now has but one drilling project in this field, although rigs are standing for Nos. 1-A, 5-A, 6 and 7 on the Barnard lease, and it is quite likely one or two of them will be spudded in within a few days.

The Associated is running eight strings of tools and, judging by the depths of several wells on the Lloyd and Hartman leases, will finish some between now and the end of July. The first will probably be No. 3 Hartman, now showing oil and gas at 5,235 feet. The company spudded in No. 1 McGonigle two weeks ago and will probably start drilling No. 1 Ventura Land shortly as it has just about been rigged up. The Bolsa Chica's No. 1 Hartman in the northern part of the field is looking quite promising at 4,945 feet and, while the company expects to finish it around 5,200 feet, it would not be surprising if it required a little more hole than that. G. J. Magenheimer's No. 1 Hartman, still farther north, is being temporarily delayed at 3,204 feet but drilling will be resumed within a few days. The Petroleum Securities is cleaning out No. 1 Willett at 4,370 feet but is drilling ahead in No. 1 Orton at 3,280 feet.

Shell Erects Tanks

The Shell finally secured permission of the City Council of Ventura to erect two 80,000-bbl. steel tanks along the ocean front and adjacent to the Associated's submerged pipeline and construction work will get under way immediately. The Shell was granted a 10-year lease upon payment of $17,500, with the stipulation that every effort must be made to reduce the fire hazard. It will now be possible to run oil from the Shell company's tank farm in the Ventura Avenue Field to the two tanks on the water front, and from there it can be pumped into tankers through a submerged pipeline reaching out into the ocean about a mile. When these two tanks are completed the Shell company and Associated Oil Co. will have storage facilities sufficient to enable them to load from four to five tankers a day at this point.

The Oak Ridge Oil Co., a subsidiary of California Petroleum, lost the rig over its No. 11 Willard in the South Mountain Field, Ventura County, early in the week by fire resulting from friction. The well, which had been producing from around the 2,000-foot level for the past two years and had been taken off production a few months ago to be deepened, had just passed the 3,000-foot mark when an explosion occurred which blew out the casing head and wrecked the derrick. The fire only lasted but a short time, due to the quick work of the company's fire squad and the sanding up of the well, and it is not believed the loss will exceed $10,000, which should cover the cost of a new rig and the equipment destroyed.

Long Beach

Several additional wells picked up the pay in the deep zone at Long Beach during the past week and indications point to the completion of some four or five new producers during the coming week. Walter P. Temple chalked up a nice completion when his No. 2 Cerritos was given a test from 4,780 feet. The well was originally carried down to 4,855 feet and, although bottom water was encountered at this point, the present production, 792 bbls. of 22.7 gravity oil, is cutting less than 1 per cent, indicating the plug put in bottom has proven quite effective. The Marine Oil Corp., which has enjoyed considerable success in the development of both the older section of the field and the northwest extension, finished a new deep zone producer in the latter area early in the week. The well was No. 60 Cerritos, which came in flowing 440 bbls. of 22.4 gravity oil from 4,860 feet, the hole being finished with a 4½-inch liner, and 4,700 feet of 2½-inch tubing.

The Wilshire's No. 1-D Cerritos, a deep sand well in the northwest extension, proved somewhat of a disappointment in that the daily production, 280 bbls., is cutting approximately 20 per cent water. The well is producing from 4,765 feet and, although there is a possibility the output may clean up, this is not assured by any means.

M. L. Bowles, who started redrilling and deepening his No. 1 Cerritos several weeks ago from the supper sand, has just picked up the top of the lower zone at 4,820 feet and a string of 6¼-inch will be run in within a few days. C. B. Colby, who is also deepening an upper zone well, encountered the deep sand at 4,785 feet and the 6¼-inch will be run in tomorrow. The Julian Petroleum set pipe in three deep zone wells during the week and No. 2 fee at 4,760 feet, No. 1 Hughes at 4,760 feet and No. 1 McShane-Lackley at 4,775 feet will be drilled into the pay and placed on production during the coming week.

Excellent Showing

The McKeon Oil Co.'s No. 6 Cerritos, being deepened from the upper to the lower zone, found an excellent showing at 4,810 feet and should register a fairly good production upon recompletion. Sharpe & Reddick's No. 1 Cerritos proved a big disappointment when put on a test in the deep zone at 4,890 feet, after being finished with a 4¾-inch liner, 30 feet shop perforated. Upon its failure to respond to swabbing operations covering two days, it was put on the beam and finished as a 100-bbl. pumper, the oil testing 22.3 degrees and showing a cut of 2 per cent. California Petroleum's No. 1 Bixby, about a half mile east of the northern part of the northwest extension, is rotating ahead at 4,828 feet and, as it is somewhat deeper than the top of the lower zone in the northwest extension, the outlook is rather discouraging as the well's only chance of developing commercial production lies in the discovery of another independent structure.

Smith & Halbert's No. 1 Cerritos was finished as a pumper in the upper zone early in the week and only registered a small daily production, 90 bbls. of 21.2 gravity oil, from 4,431 feet. The well was finished with an 8¼-inch water string, and it is probable it will be deepened if the production falls off, as it was really just within the commercially productive limits when completed. The United Oil Co. has decided to drill another well in the older section of the field and is accordingly building a rig for No. 8 Haas. The company will probably list it as a 500-bbl. completion some time during the next three or four months.

Rosecrans

The Barnsdall has been experiencing a little difficulty in the Rosecrans Field in getting No. 7 Rosecrans lined up for a satisfactory production test but now that the hole has been thoroughly cleaned out to bottom, 5,726 feet, it is believed tubing can be run in and the well given a chance to do its stuff within a few days. The Union has discontinued drilling on No. 4 Rosecrans, in the southwestern part of the field and, because of the unfavorable outlook, the suspension at 4,756 feet will be for an indefinite period, with a possibility of an abandonment rather than a resumption of drilling. The Union's work on the Trust lease has not been any too productive and it would not be at all surprising if further drilling on this lease was suspended.

The Associated's No. 50 Vickers in the Inglewood Field is drilling ahead in the oil sand at 1,940 feet and, if the company plans on completing it in the upper sand, it will probably be tanking oil within two weeks. This is the only work being done in this area by the Associated, although No. 2 Vickers is being cleaned out at 2,640 feet, while No. 17 on the same lease is being reconditioned at 2,608 feet. The Standard is filing an abandonment notice on its deep test, No. 1 on Vickers lease No. 3, due to its failure to find anything resembling commercial production. It turned out to be a duster at 5,506 feet and, while it is conclusive so far as this lease is concerned, it is by no means a satisfactory deep zone test as it is located outside of the productive limits of the upper horizon. The abandonment of this test leaves the Standard with two drilling projects on the Baldwin Cienega lease and one each on the Vickers and Stocker properties.

Dominguez

The Shell has just finished No. 31 Reyes in the Dominguez Field at 3,978 feet and, although it has not yet been given a production test, this well, together with Nos. 33 and 34 on the same lease, should be tanking oil within a short time. The Union is only drilling two new wells in this field, No. 14 Callender at 4,027 feet and No. 13 Hellman at 1,180 feet, although it is reconditioning several former producers. Preliminary estimates indicate the total field production during May aggregated approximately 653,000 bbls., an average of 21,000 bbls. daily. It is quite likely production will register a slight increase within 60 days, during which period the conservation plants located in this field will get under way.

Wilshire Oil Co. has refused to release any information on its wildcat in the newly opened town lot area at Huntington Beach and has even gone so far as to build an 8-foot fence around the rig and covered up the top of the ditch box. A drill pipe count, however, indicated that the well is down approximately 2,800 feet. Julian Petroleum is resuming operations on its wildcat a short distance away from the Wilshire's well and, since the Superior has just about finished rigging up No. 1 Jones, also in this vicinity, it is believed the latter will be started downward within a few days also. The Standard has spudded in another driller, No. 48 on Lease B, just north of the town lot area, and the progress of this well will be watched with considerable interest, in view of the fact that the Superior, Julian and Wilshire Oil companies are all drilling farther south. Superior Petroleum ran into a little fishing job in No. 1 Buck, a northern outpost, at 4,056 feet and no additional footage will be made until the lost drill pipe is either recovered or sidetracked.

Santa Fe Springs

California Petroleum is abandoning No. 1 on Mattern Lease No. 4, at one time a Meyer zone producer in the Santa Fe Springs Field, because of exhaustion and salvage operations have already been started. The Shell is also listing an exhausted producer, No. 4 Thompson, for abandonment at 4,670 feet. The former was making 95 bbls. of water and 2 bbls. of oil at last reports, while the latter

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TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year To date	Same time Last year
Crude oil	306,592	43,799	363,509	51,973	5,987,878	7,811,472
Fuel and gas oil	354,453	50,636	352,892	50,413	4,529,118	237,873
Gasoline	156,661	22,380	173,125	24,732	3,126,261	2,969,853
Tops	.....	.....	.....	.....	74,619	251,000
Coastwise—						
Crude oil	146,869	20,981	679,012	97,002	11,320,672	13,624,095
Fuel and gas oil	148,270	21,181	280,859	40,122	4,208,736	5,367,398
Gasoline	58,217	8,317	178,864	25,552	3,400,050	2,043,962
Kerosene	.....	.....	.....	.....	166,870	216,978
Tops	.....	.....	.....	.....	390,446	85,986
Exports—						
Crude oil	.....	.....	.....	.....	2,342,030	1,085,762
Fuel and gas oil	249,923	35,707	583,057	83,294	7,465,514	6,297,070
Gasoline	.....	.....	471,995	67,428	2,529,480	1,715,498
Tops	.....	.....	.....	.....	.....	170,407
Kerosene	72,350	10,336	.....	.....	887,476	1,027,633
TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS						
Fuel and gas oil	.....	.....	73,010	10,430	514,370	86,092
Gasoline	.....	.....	.....	.....	592,094	565,590
Tops	.....	.....	.....	.....	229,775	624,175
Lubricants	.....	.....	.....	.....	217,147	159,968
Coastwise—						
Fuel and gas oil	119,192	17,027	188,661	26,951	2,311,354	1,661,383
Gasoline	124,518	17,788	101,149	14,450	1,872,641	1,221,403
Kerosene	5,190	741	2,618	374	191,757	124,079
Exports—						
Fuel and gas oil	129,087	18,441	.....	.....	1,529,180	891,212
Gasoline	62,884	8,983	.....	.....	732,961	351,672
Kerosene	.....	.....	96,272	13,753	912,575	536,752
Lubricants	.....	.....	.....	.....	.....	293,429

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Decline in Gulf Coast Pools Continues

Boling Pool Slump and Failure of Deep Wells at Spindletop to Hold Up Responsible. Goose Creek Has Best Well

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., June 21.—The gross production in the Gulf Coast pools has been steadily declining during the past 30 days, the estimated daily average for the week ending June 19 being 90,350 bbls., a decrease of 3,795 bbls. compared with the previous week. On the other hand, the gross for the southwest fields increased 1,040 bbls., due largely to the activity in the Mirando districts.

The gross in the Coastal region has dropped 10,195 bbls. per day since June 5, when the estimate for that week was 100,545 bbls. Part of the decrease is due to the slump in the new Boling Pool and part to the failure of the deep sand wells at Spindletop to hold up. The estimate for the week of May 15 was 102,780 bbls., accounted for by flush wells in the Lockport (La.) Pool, the Nash Pool and around Spindletop.

Drilling in the older pools has failed to maintain the average output around what it was during May, especially in the Hull and Orange Pools, while in such districts as South Liberty and West Columbia the decrease in output has been marked during the past 30 days. Both these pools reflect the lack of development work. The original areas have been defined, but on the west side of the South Liberty Pool the Humble Oil & Refining Co. is drilling on the Welder land. It has one well there. One or two rigs have been running on the northwest flank of the dome at West Columbia without developing anything.

Boling Disappoints

The Boling Dome is a disappointment to date. The daily average for May was 6,794 bbls., April, 5,438 bbls., March, 4,590 bbls. These figures compare with 2,100 bbls. for this week, 21 wel's being listed. The results of the work there this week do not add any optimistic outlook for the district. As has been mentioned before in these reviews it is the largest saline dome in the Coastal territory. The salt area covered 3½ miles from north to south and 2½ miles across from east to west. The dome area was again extended about 1 mile this week when the Sun Oil Co.'s No. 1 Farmer on the northeast side and across the river in Brazoria County, went into anhydrite at 1,057 feet.

The Houston-Gulf Gas Co. went into the same formation in No. 1 Woodbin, 1 mile northwest of production, at 1,007 feet and abandoned the hole. James Weed's No. 5 on top of the dome started heading 600 bbls. at 428 feet and is now heading 400 bbls. The shallow sand was found on the dome above the salt. On the northwest side, where all the production found to date is located, the Humble-Gulf Co.'s joint No. 9 Hawes will make a pumper. The Texas Company's No. 9 Taylor is bailing at 3,490 feet. The Sinclair Oil & Gas Co.'s No. 2 Taylor was worked over and is pumped 175 bbls. at 3,500 feet. The Oxford Oil-Southern Exploration joint Nos. 1 and 5 Floyd were worked over at 2,800 to 3,450 feet, respectively, without results.

In and around the productive area, The Texas Company's No. 8 is drilling below 4,135 feet and No. 1 Felder is around 3,475 feet. No. 2 Floyd is at 1,980 feet and No. 3 is rigging. Vacuum Oil Co.'s No. 1 Hooper is deepening around 4,655 feet. Locations have been made for Nos. 4 and 5. The Humble-Gulf joint No. 6 Hawes, is drilling at 4,875 feet. No. 7 is at 3,975 feet. No. 8 is a location. A derrick is up for No. 11. No. 12 is at 2,655 feet and No. 13 at 3,090 feet with a location made for No. 14. The Sun Oil Co. is working over No. 1 Taylor. No. 6 is rigging. Locations have been made for Nos. 7, 8 and 9. No. 11 is around 4,376 feet. Out to the northwest, the Humphrey Corp.'s No. 1 Mick is below 4,325 feet and No. 1 Woodbin is around 3,355 feet.

Daily Average Gross Production

The estimated daily average gross production for the week ending June 19 in the southwest fields is placed at 39,585 bbls., an increase of 1,040 bbls. compared with last week. Luling increased 1,190 bbls. and Lockhart declined 160 bbls. Only a few inside locations are being drilled up in the latter field, as the limits of the Serpentine formation have apparently been defined.

The estimate for each field is as follows:

Field—	Gross Bbls.
Luling	21,890
*Mirando	9,475
Somerset	2,070
Calliham	130
Rockdale-Minerva	980
Lockhart	5,040
Total	39,585

*Includes Webb, Jim Hogg, Zapata and part of Duval Counties.

Gulf Coast

Of the estimated gross output in the Coastal pools for the week of the 10th 12,070 bbls. are credited to the South Louisiana districts. The estimate for each pool is as follows:

Pool—	Gross Bbls.
Boling	2,100
Batson	1,450
Big Creek	900
Blue Ridge	815
Barber Hill	400
Dayton	50
Damon Mound	900
Edgerly (La.)	800
Goose Creek	10,240
Humble	4,100
Hull	19,325
High Island	150
Jennings (La.)	1,050
Lockport (La.)	3,600
Markham	80
Nash	900
Orange	10,350
Orchard	750
Pierce Junction	1,525
Piedras Pintas	80
Spindletop	2,875
Saratoga	1,470
Sour Lake	5,925
South Liberty	5,005
Vinton (La.)	6,540
West Columbia	8,850
*Miscellaneous	120
Total	90,350
Grand total for week	129,935
Grand total last week	132,690
Net decrease	2,755

*Includes Nacogdoches, Washington and Kleberg Counties.

Completions in the Pools

A total of 23 wells were completed in the pools during the week including worked-over holes, the failures number 3 and salt water wells, 6, leaving 14 net producers. The new production is 2,690 bbls.

H. R. Cullens' No. 2 Howe in the center of the old pool at Pierce Junction was worked over at 4,050 feet and responded flowing 500 bbls. by heads. On the west side, the Rio Bravo Co.'s No. 2 P. F. Seitegast bailed saltwater at 3,950 feet.

None of the pools furnished anything of consequence. At Hull the Gulf Production Co.'s No. 22 Morris-Phillips is pumping 50 bbls. at 3,200 feet and No. 11 Phoenix, a work over, is making 115 bbls. at 2,550 feet. The Texas Company's No. 1 Hannah bailed salt water at 3,100 feet. The Texas Company's No. 10 Merchant is bailing at 4,300 feet.

In the Orange Pool, which usually contributes one or more flowing wells to the week's output, the Orange Petroleum Co.'s No. 12 Chesson will make a pumper at 4,325 feet. The Gulf Production Co.'s No. 2 Peveto is bailing at 3,525 feet. The Kishi Development Co.'s No. 7 McGuire on the east side of Cow Bayou, deepened to 3,300 feet, is bailing.

In the old part of the Spindletop Pool, Wilson & Broach's No. 49 Higgins is pumping 40 bbls. at 825 feet. Porch and Telshaw's No. 4 Trembly is a water hole at 900 feet, as is the Seven Oil Co.'s No. 1 Trembly at 1,700 feet.

The new deep sand sections there are fairly active. The Yount-Lee Oil Co., which opened the deep production there, is drilling No. 5 Gladys on the north side at 2,700 feet, having set casing. No. 1 Davis is at 2,630 feet. No. 6 McFadden on the southeast, is sidetracking at 2,435 feet. The Rio Bravo Oil Co.'s No. 1 fee is at 435 feet. The Sun Oil Co.'s No. 1 Weed is at 2,435 feet. Hines and others' No. 1 Quinn is at 1,235 feet. The Gulf Production Co.'s No. 1 Weed is at 2,545 feet. O. Barbee's No. 1 Garrick, is deepening at 1,760 feet. Locations have been made for Brown Williams' No. 1 Gladys and Paggi & Co.'s No. 1 Gordon.

Best of Week

The best completion of the week is the Gulf Production Co.'s No. 5 Hirsch in the bay at Goose Creek, which came in flowing 950 bbls. by heads at 4,450 feet. The Powell Oil Co.'s No. 6 Bryan is bailing at 2,725 feet and the Humble Oil & Refining Co.'s No. 22 Peninsula is doing the same at 3,310 feet.

The Capitol Oil Co.'s No. 5 Hodges in the deep sand section on the north side of the Batson Pool is preparing to bail at 3,475 feet.

The Rio Bravo Oil Co.'s No. 4 Cotton in the Saratoga Pool is making 100 bbls. of fluid at 1,550 feet, 22 per cent water.

In the Sour Lake Pool, the Lake View Oil Co.'s No. 48 Hardin, showed salt water at 1,200 feet.

The Island Oil Co. abandoned No. 1 McCarthy at High Island at 475 feet on top of the dome.

In the Lockport (La.) district in Calcasieu Parish, near Lake Charles, the Vacuum-Gulf Co.'s joint No. 3 Farquhar is bailing at 4,400 feet. It is west of the production.

The Utropal Oil Co.'s No. 1 Clement in the Jennings (Evangeline) Pool got salt water at 2,700 feet.

Two wildcats were abandoned during the week. The Roxana Petroleum Corp. quit No. 1 Cooper in the southern part of Brazoria County at 539 feet. The Roxana Corp. is supposed to have located a new dome there. It is now drilling No. 2 Clemen at 1,675 feet and No. 2 Allen ranch at 4,295 feet in shale.

The Gulf Production Co. abandoned No. 7 Thomas at Fannette Dome, southwest of Beaumont in Jefferson County, at 1,200 feet. The bit was in gyp rock. Its

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DRILLING RECORD IN ALBERTA; INDICATIONS OF GOOD PRODUCER

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ont., June 19.—In the Irma-Wainwright Field, east-central Alberta, Emerald Oils, Ltd., No. 1, LSD 8, Section 30-45-6w4, has got the oil sand at 2,242 feet. Casing will be cemented and the well drilled in. The test made the first 2,100 feet of drilling in 11 days, establishing a record for the Alberta fields. The rotary outfit ran with three crews working three 8-hour shifts. All indications point to a good producer. Emerald's No. 1 is just west of Edmonton-Wainwright No. 1, which was brought in a few weeks ago with the same outfit.

Edmonton-Wainwright Oils, Ltd., No. 1, LSD 4, Section 29-45-6w4, which got production at 2,275 feet, is being put on the pump. The well is still flowing by heads, and is estimated good for around 125 bbls. a day. Fabyan Petroleums, Ltd., LSD 8, Section 24-45-7w4, has the derrick up and is waiting for some machinery. Interior Oil Co., Section 36-44-7w4, has timbers for a new derrick to replace the one burned in April, and is rigging up to resume drilling at 1,200 feet. In the Irma district, Edmonton-Wainwright Oils, Ltd., is drilling at 1,400 feet on the Irma Oil Development Co. test, LSD 16, Section 28-45-9w4. Cores and samples are being taken as the work progresses.

Edmonton Gas & Development Co. has the contract to drill the Western Consolidated No. 2 test in Section 30-45-6w4. This test is now rigging up with a rotary outfit. Following the completion of Western Consolidated No. 2, No. 1 well in LSD 8, Section 20-45-6w4, which has already been carried to 1,400 feet, will be finished. Drilling will be in charge of Jack Cruse and the outfit will run double tour. Edmonton Gas & Development Co. will also drill a rotary test for H. H. Croxton and associates of Calgary, in LSD 13, Section 14-45-6w4. Wainwright Petroleums, Ltd., is erecting a derrick for a test in LSD 6, Section 30-45-6w4.

Ribstone Structure

On the Ribstone structure, the Ribstone Petroleum Syndicate has a location in Section 10-43-3w4. Lloydminster Oil & Gas Development Co. of Lloydminster, Sask., has secured an Alberta charter and will drill on a location 17 miles south of Lloydminster on the Alberta side of the boundary. If gas production is secured it will be piped to Lloydminster.

W. H. Allen, of the Southwestern Engineering Co., is in the Wainwright Field investigating a project for a gasoline extraction plant, to be erected by his company at a cost of $100,000 to utilize the natural gas from wells in Wainwright area. A plant with a maximum capacity of 4,000 gallons a day is contemplated.

In the Border Field, United Oils, Ltd., No. 2, drilling 5 miles southeast of Foremost, penetrated the gas sand at 2,052 feet with an initial production of 7,000,000 feet a day. This is reported to have increased to 15,000,000 feet when the test was drilled into the sand. Fear of an intrusion of water has decided the company to finish the well as a gasser at this depth instead of continuing it as a deep test for oil. Following the completion of United No. 2, the old United No. 1 well near Foremost, drilled shortly after the Calgary boom, will be cleaned out and brought back to the gas sand.

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Tonkawa Well Makes 8,500 Bbls.

Some Water Appearing in Gypsy Well Which Was Feature of Week in Oklahoma. Fifteen Locations Are Made

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The Tonkawa deep sand operation refused to be buried and has been the center of attraction for all eyes during the past week. Two weeks ago, The Texas Company revivified interest in this section when a good well was completed on the lease which it purchased from Louis Friedman and others. This well was a half mile west of the small well drilled last year by the Friedman interests, and at the time of the sale, there was considerable discussion whether the west side of the lease would prove profitable. The old Friedman well was located in the SE cor. NE, Section 28-25-1w, and at the time of its completion gave an impetus to drilling in that area as it proved the existence of a good body of sand for a half mile north. The Texas Company dropped a half mile west and drilled a good well in the SW cor. NE, Section 28-25-1w. The well had the deep Wilcox sand at 4,280 feet and flowed at 100 bbls. an hour initially. It is now making 1,800 bbls. daily.

The Gypsy Oil Co.'s No. 1, SE cor. NE SW, Section 28-25-1w, is a quarter of a mile to the south of the second well of The Texas Company. The Gypsy well topped the Wilcox sand at 4,270 feet and penetrated a distance of 12 feet. This is exactly the same at The Texas Company well. The Gypsy well had an initial production of 350 bbls. an hour; and for the 24 hours ending Monday of this week, it produced 8,500 bbls. and was making some water. The water was estimated at 2 per cent of the production.

Immediately upon the completion of the Gypsy well, there were approximately 15 new locations announced and at present there are several derricks in the course of construction. The adjoining lease owners are the Skelly Oil Co., the Wentz Oil Corp., the Barnsdall Co. (which has a lease of the Waite Phillips Co. close to the well) and T. B. Slick.

The Mahoney lease of the Wentz Oil Corp. is the east offset to the Gypsy well, and comprises the southeast quarter of Section 28. It is reported that the Wentz Oil Corp. will drill the entire east line of this lease. This rumor has not been confirmed.

That there is some variation in the structural conditions is indicated by the fact that according to the figures, the Gypsy well is 27 feet higher structurally than The Texas Company well, and yet The Texas Company well has never made any water. It is considered unlikely that the water in the Gypsy well is coming from behind the casing.

Seminole Producers

In Seminole County the Tidal Oil Co. has a well in the region which was pioneered by the Indian Territory Illuminating Oil Co. The Tidal well is No. 1, NE cor. SW, Section 24-9-6, and is a direct west offset to the I. T. I. well. The new well had the sand 3,928-75 feet and is making 38 bbls. an hour.

In another section of Seminole County, the Sinclair Oil & Gas Co.'s No. 1 Bull, NW cor. NW, Section 17-9-7, had sand 4,040-82 feet and swabbed 35 bbls. daily with considerable cavings in the hole. This is another marker for a section of the country which has long been considered favorably for oil production, and which has been leased solidly for several years. As a future area, Seminole County is worth observing.

The Wewoka deep sand area is holding its production very well against the normal decline. The 16 wells in the pool were making 23,003 bbls. for the 24 hours ending Monday morning. There was one well completed 10 days ago when W. R. Ramsey's No. 5 Amos, SW cor. SE SE, Section 31-8-8, made 3,545 bbls. from sand 4,181-93 feet. This well was responsible for the production of the pool being maintained. There are 60 wells drilling at Wewoka, and 15 of them should be completed within two weeks.

With no completions of extraordinary interest, the Garber Field in Garfield County made a production of 37,000 bbls. on last Monday. Interest in this field is on the wane and there are no deep sand wells drilling.

Good Well in Burbank

The Burbank sector of Osage County offered a good well when the Phillips Petroleum Co.'s No. 1, SW cor. NE, Section 2-27-5, made 1,000 bbls. in the first 17 hours of its flow. Sand in this well was 2,895-2,935 feet. Peters and Oliphant have a well in No. 4, SW cor. NW NW, Section 17-27-6, which had sand 2,929-75 feet and flowed 573 bbls. the first day.

In the Skelly-Ford area of Lincoln County, the Mid-Continent Petroleum Corp.'s No. 7 Earp, SW cor. SE NW, Section 8-15-6, had sand 4,057-65 feet.

During the past three weeks there has been a noticeable softening of the crude market in Oklahoma fields. There is the same scramble for oil, but the shipments have declined. The production is maintaining a fairly level rate but today witnesses only 65,000 bbls. being withdrawn from storage, whereas a month ago the amount being taken out each day was double this figure.

A list of production in some of the pools of the State follows:

Cromwell		
Amerada Petroleum Corp.	8	360
Berry Petroleum Co.	1	28
Burk-Greis	4	232
Carter Oil Co.	56	2,788
Central National Oil Co.	8	294
Continental Oil Co.	10	821
Mid-Continent Petroleum Co.	39	847
Empire Gas & Fuel Co.	3	98
Gilliland Oil Co.	4	87
Gypsy Oil Co.	66	2,811
Houston Oil Co.	4	473
Independent Oil & Gas Co.	3	15
Kingwood Oil and Sinclair Oil & Gas Co.	4	57
Laurel Oil & Gas Co.	2	43
McMan Oil Co.	13	512
Mid-Kansas Oil & Gas Co.	7	260
Magnolia Petroleum Co.	10	522
Prairie Oil & Gas Co.	14	568
Pure Oil Co.	10	184
Roxana Petroleum Corp.	22	769
Shaffer Oil & Gas Co.	8	448
Sinclair Oil & Gas Co.	45	2,091
Snowden & McSweeney	4	262
Southwestern Petroleum Co.	19	894
Superior Oil Co.	6	76
Tidal-Carter	2	81
Tidal-Osage	9	411
Barnsdall Oil Co.	11	437
White Eagle	2	12
Nowata Oil & Ref. Co.	3	135
Phillips Petroleum Co.	1	68
H. F. Wilcox Oil & Gas Co.	6	159
Total	404	17,300
Ingalls Pool		
Prairie Oil & Gas Co. (Olean)	7	3,933
Roxana Petroleum Corp.	2	2,334
Magnolia Petroleum Co.	1	5
Total	10	6,272

Garber Deep Sand

Daily average production of the deep sand wells in the Garber fields for the week ended June 16 was as follows, by leases:

Company and lease—	Wells	Oil	Water
Carter Oil Co., Dively	2	111	75
Franchot, Lynds	1	70	40
Healdton Oil & Gas Co., Belveal	2	20	85
Mid-Continent and Marland, School Land	13	1,982	1,000
Prairie Oil & Gas Co., Wishard	2	52	0
Roxana Petroleum Corp., Schroeder	26	13,562	3,500
Roxana Petroleum Corp., Wolfe	1	158	250
Sinclair Oil & Gas, Belveal	5	197	380
Denker	2	81	20
Hartley	16	6,387	8,775
W. Kisner	7	4,837	1,725
Shaffer	1	40	2
N. Walker	23	6,879	5,305
Total	54	18,416	16,207
By Companies			
Prairie Oil & Gas Co.	2	52	0
Franchot	1	70	40
Carter Oil Co.	2	111	75
Healdton Oil & Gas Co.	2	20	85
Mid-Continent and Marland	13	1,982	1,000
Roxana Petroleum Corp.	27	13,720	3,750
Sinclair Oil & Gas Co.	54	18,416	16,207
Total	101	34,371	21,157

Okmulgee County

W. J. Sherry and others are rigging up No. 1 Pence, SW cor. NE SE, Section 20-16-11. Sheridan Oil Co. has a rig up for No. 1 Woods, SW cor. SE, Section 21-16-11. Iron Mountain Oil Co.'s No. 1-A, SW cor. SE SW, Section 34-16-11, had sand at 2,189-2,212 feet and made 50 bbls. after a shot of 60 quarts. McCulloch Oil Co. has the rig up for No. 1 Maxwell, NW cor. NE SE, Section 17-16-12. Devonian Oil Co. is drilling at 1,840 feet in No. 2, SE cor. SE, Section 24-16-12; No. 5, CEL SE, Section 24-16-12, had sand at 2,198-2,213 feet and made 130 bbls. after being shot with 15 and with 20 quarts. Independent Oil & Gas Co.'s No. 15, SW cor. NE NW, Section 27-16-12, had sand at 2,537-51 feet and was shot with 35 quarts. It is making 100 bbls. J. S. Cotes has a machine in for No. 6 Techarna, NE cor. SE NE, Section 13-16-13. Leonard Petroleum Co.'s No. 2, SWL SW, Section 19-16-13, is dry and abandoned at 2,403 feet. Enfisco Oil Co.'s No. 5 Tiger, CWL NW NW, Section 30-16-13, is drilling at 1,759 feet. McCulloch Oil Co. is drilling at 1,772 feet in No. 1-A, NW cor. NE NE, Section 30-16-13. Little and others have a rig up for No. 15, NE cor. NW SW, Section 2-16-14. Hilt and others' No. 17 Oswalt, CSL SW SE NW, Section 6-17-13, is drilling at 1,920 feet. D. W. Franchot and the Mid-Continent Petroleum Corp. are drilling at 1,200 feet in No. 7 Bruner, NW cor. NE SW, Section 22-17-13. Pettit and others' No. 2, SE cor. SW, Section 4-17-14, had sand at 1,470-1,507 feet and made 35 bbls. after a shot of 10 quarts. H. & N. Drilling Co. has a dry hole at 1,538 feet in No. 1, NE cor. NW NE, Section 9-17-14. Pettit and others' No. 2 Perryman, NW cor. NE, Section 9-17-14, had sand at 1,470-1,511 feet and made 25 bbls. naturally. O. W. Dickerson's No. 2-A, NW cor. SW SW, Section 12-16-13, is dry and abandoned at 2,005 feet.

Jackson & Wise are drilling at 1,000 feet in No. 8 Grayson, CEL SE SE, Section 3-15-11. Phillips Petroleum Co.'s No. 2, SE cor. NE, Section 23-15-12, is dry at 1,567 feet. Wigton & Long and the Mid-Continent Petroleum Corp. have a rig up for No. 1 Butler, SE cor. SW NE, Section 23-15-12. W. E. Holmes' No. 1, NE cor. SE SE, Section 7-14-11, had sand at 2,440-67 feet and made 50 bbls. after a shot of 80 quarts. R. E. Garrett and others have set the 10-inch casing at 1,000 feet in No. 1, NE cor. NW NW, Section 30-14-11. The Carter Oil Co. and others are drilling at 350 feet in No. 2 Duff, NE cor. NW NE, Section 11-14-12. T. A. Johnston Co. and others' No. 6, CNL SW NW, Section 22-14-12, had sand at 1,980-88 feet and made 178 bbls. naturally.

Devonian Oil Co. and the Independent Oil & Gas Co. have a dry hole at 3,109 feet in No. 14, C north half SE SE, Section 7-15-13. Red Bank Oil Co.'s No. 1 Tecumseh, NW cor. SW SW, Section 10-15-13, is a rig. Future Development Co.'s No. 4, NW cor. SE SE, Section 2-15-14, is drilling at 980 feet.

Other Okmulgee Operations

Payne and others have spudded No. 1-A, SW cor. SW, Section 15-15-14. The Texas Company's No. 4, SW cor. SE, Section 16-15-14, is drilling at 1,650 feet. H. L. Jolly's No. 1, SE cor. SW, Section 16-15-14, had sand at 2,316-23 feet with 5,000,000 feet of gas and 500 bbls. of oil. Elliott & Vensell's No. 3, C SE SW, Section 18-15-14, had sand at 1,840-60 feet and made 15 bbls. after a shot of 40 quarts. The Texas Company is drill-

TRANSCONTINENTAL ON TOP OF SAND IN ITS ROSSEN WILDCAT

CORSICANA, Tex., June 19.—No results were reported from the East Central Texas area in the past week. Whatever interest remains in the field is centered in the work being done by the Transcontinental Oil Co. in Limestone County and the wildcatting in Cherokee County. The Transcontinental Oil Co. is on top of sand in its second test west of Mexia and results should be known in a week or so, as casing was being run.

The Humphreys Petroleum Corp., which had reached a depth of 2,409 feet in its No. 1 Owsley, Dillard survey, Cherokee County, will drill deeper after testing a sandy shale at 2,370-2,403 feet, which showed a little oil after the hole had been bailed down. The Humble Oil & Refining Co. set casing at 736 feet in No. 1 Earle & Ragsdale, Johnson survey, and was drilling in sandy shale at 1,960 feet. The Humphreys corporation and Collington's No. 2 Clapp, Jewell survey, was drilling in hard chalk at 3,595 feet, top of the chalk at 3,210 feet. Nicholle and others' No. 1 Hillbrouck had a fishing job at 450 feet. The crew has been having trouble with a cavey hole.

In Hill County, Johnston & Phelps' No. 1 Rose, Baldez survey, was at a total depth of 3,347 feet with 200 feet of collapsed casing in the hole. The same operators were shut down at 1,150 feet waiting for pipe in No. 1 Sanderson, Baldez survey.

The Transcontinental Oil Co. is running casing to the top of sand at 2,830 feet in No. 1 Rossen, its second test in the Nigger Creek territory west of Mexia. No. 1 Ross, which was reported abandoned some time ago, was not definitely given up but is shut down awaiting results in the test on the Rossen farm, which is about 1,500 feet distant.

In Milam County The Texas Company is rigged up on a test on the Esperson farm, Lunde survey.

Garland Kent's No. 1 Weslens, J. D. Mathews survey, Navarro County, which swabbed 190 bbls. of oil in 24 hours at a total depth of 2,949 feet, has not yet been completed. The hole caved 6 feet, cutting the total depth to 2,943 feet, and preparations were being made to complete with standard tools. Farris and others' No. 1 Fullwood, Malone survey, Navarro County, had a slight showing of heavy oil at 1,015 feet. It bailed dry. Casing was raised a few feet and fresh water broke in and had not been shut off.

Eisenmayer and others have started drilling No. 2 Baker, Saver survey, Limestone County. The Pure Oil Co.'s No. 2 Stockton, Capp survey, was drilling in chalk at 2,640 feet.

In Anderson County the Humble Oil & Refining Co.'s No. 1 Southern Pine Lumber Co. had reached a depth of 1,786 feet and was shut down until casing had set.

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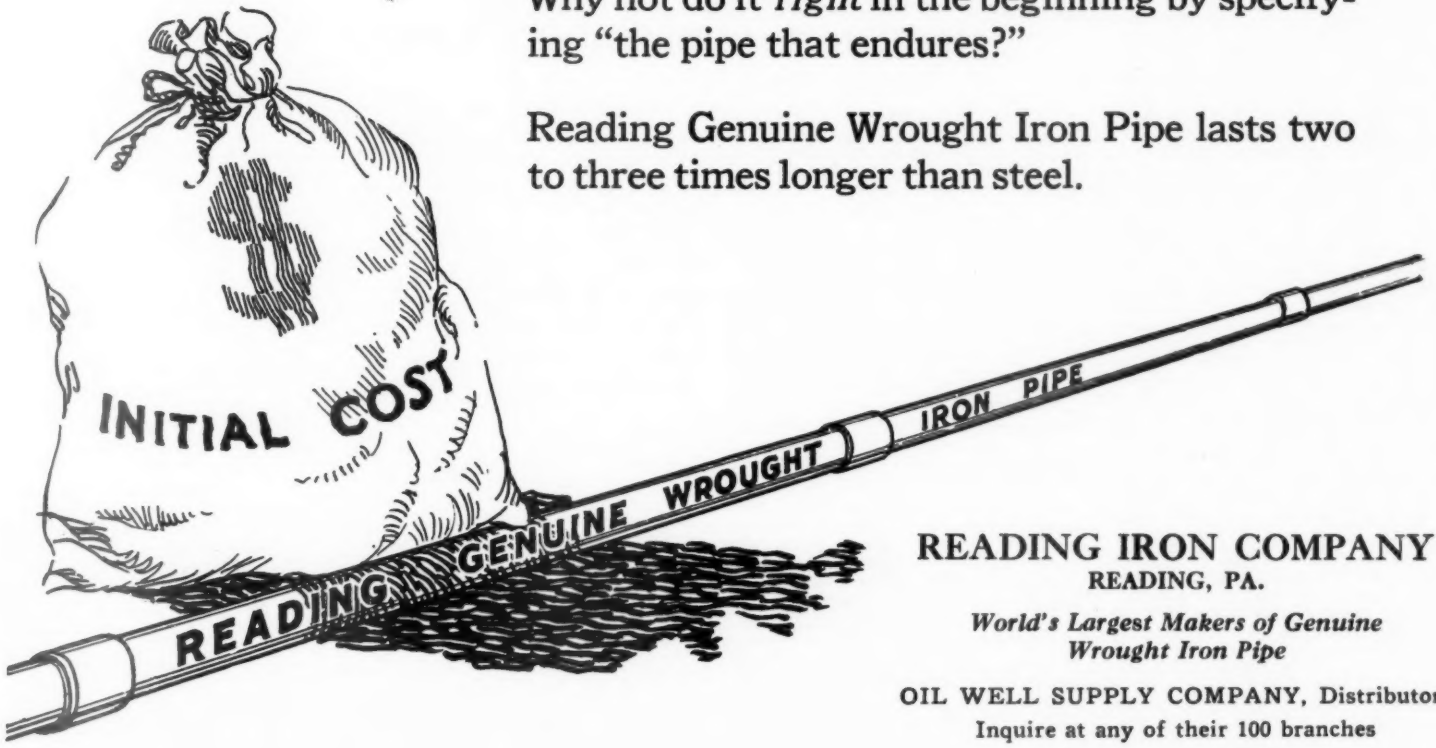

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ing at 1,650 feet in No. 13 Garrett, NW cor. NE NE, Section 21-15-14. Jolly-Ogg Co. has a machine in for No. 6 Garrett, NW cor. NE NE, Section 21-15-14. J. L. Selby has spudded No. 6 Osborne, CSL NE SE, Section 21-15-14. The Texas Company is drilling at 1,400 feet in No. 15, NW cor. SE NE, Section 21-15-14. Burke-Greis Oil Co. and others are drilling at 1,400 feet in No. 9, NE cor. SE, Section 31-15-14. Mechline & Berling have rigged up No. 5 Colbert, C NE NE, Section 14-14-14. T. B. Slick has a gas well in No. 1, SW cor. NE SE, Section 14-14-14. Sand was at 1,697-1,703 feet and the well is shut in with 4,000,000 feet. Mechline & Berling have a dry hole at 1,800 feet in No. 1-W, NW cor. SW, Section 15-14-14. Misener and others' No. 8, CSL SW SW, Section 16-14-14, had sand at 790-814 feet and made 15 bbls. after a shot of 120 quarts. Okliana Oil Co.'s No. 9, CSL NW SE, Section 16-14-14, is dry at 1,793 feet. Joe Gardner has a rig up for No. 2 Rentie, SE cor. SE, Section 32-14-14. The Texas Company is rigging up No. 2 Jones, SW cor. NW, Section 28-13-11. Wigton & Long and others have a failure in No. 4, NW cor. SE SE, Section 29-13-11, at 3,308 feet. Denver Producing & Refining Co.'s No. 7, CNL SW NE, Section 32-13-11, has 10,000,000 feet of gas in the top of the sand at 1,945-2,050 feet. H. E. Clark and others' No. 9, CEL SW SE, Section 22-13-12, had sand at 2,950-62 feet with a show for a 25-bbl. well. Barnsdall Oil Co. has spudded No. 3, SE cor. NW NE, Section 10-12-11. Phillips Petroleum Co. is drilling at 600 feet in No. 2, SW cor. NE NE, Section 10-12-11; No. 3 Randall, NE cor. NE, Section 10-12-11, is rigged up. J. K. Leard and others' No. 1, NE cor. SW, Section 13-12-11, is dry at 3,391 feet. Independent Oil & Gas Co.'s No. 2, C SW SE, Section 15-12-11, is dry at 3,542 feet. Josey Oil Co.'s No. 3, SE cor. NW NW, Section 33-12-11, had sand at 3,602-13 feet and swabbed 50 bbls. It will be drilled deeper; No. 13, SW cor. NW SW, Section 33-12-11, had sand at 3,620-47 feet and made 325 bbls. No. 15, NW cor. SE NW, Section 33-12-11, is drilling at 2,100 feet. Morton and others' No. 10, C NW NE, Section 7-12-12, had sand at 2,571-2,652 feet and flowed 150 bbls; the rig is up for No. 11 Tiger, NE cor. SW NE, Section 7-12-12; Sheldon and others have a rig up for No. 1 Foster, NW cor. SW NE, Section 3-13-13. Cal-Cul Oil Co. is drilling at 450 feet in No. 8, NW cor. SE SW, Section 15-13-14. Simms Oil Co. has a rig on the ground for No. 17 Doyle, CNL NE SW, Section 15-13-14. Iron Mountain Oil Co.'s No. 10 Thornbury, SW cor. SE NW, Section 24-13-14, is a rig. Sam Bright has a rig up for No. 5 Stokes, C SE NW, Section 25-13-14. Columbus Drilling Co. has a rig on the ground for No. 14 Doyle, NE cor. SE NW, Section 28-13-14.

Wirick & King have a dry hole at 3,085 feet in No. 1, SE cor. NE, Section 31-11-12. Kingwood Oil Co. has a dry hole at 2,843 feet in No. 5, SE cor. NE NE, Section 6-12-14. Nicholson Oil Corp.'s No. 5, CNL NE SE, Section 13-11-13, had sand at 1,235-45 feet with a show of gas. B. Morgan and others are drilling at 1,350 feet in No. 5 Kanard, NE cor. SE NE, Section 13-11-13.

Creek County

Roxana Petroleum Corp. has a dry hole at 3,673 feet in No. 1, SE cor. NW, Section 5-17-8. Aztec Oil Co. and others have rigged up No. 6 Johnson, CWL SE SE, Section 14-17-8. Savoy Oil Co. has completed No. 4, SE cor. NW SE, Section 22-17-8, for 60 bbls. after a shot of 60 quarts in sand at 2,356-88 feet. Margay Oil Co.'s No. 3, NW cor. SE NE, Section 9-16-8, had sand at 2,819-87 feet and made 12 bbls. naturally with a show of water. The Texas Company's No. 1, SW cor. SE, Section 3-17-9, had sand at 1,983-2,032 feet and made 275 bbls. after a shot of 140 quarts. Roxana Petroleum Corp.'s No. 1, NW cor. NE, Section 10-17-9, had sand at 2,035-71 feet and made 205 bbls. after a shot of 60 quarts. The Prairie Oil & Gas Co. has a rig up for No. 7 Self, SE cor. NW SW, Section 22-17-9. McCulloch Oil Co. has built the rig for No. 1 John, NW cor. SE, Section 4-17-10. F. C. Adams is rigging up a machine for No. 2 Haley, CWL NW SW, Section 20-17-10. J. H. Wright has a rig up for No. 11 Dawson, NW cor. SE SW, Section 24-17-10. Pioneer Petroleum Co.'s No. 6, SW cor. NE, Section 24-17-10, is flowing 750 bbls. from sand 2,437-42 feet. J. H. Wright has built a rig for No. 12 Dawson, NE cor. SW, Section 24-17-10; No. 7 Tah Kah Ney, CSL SE NW, Section 24-17-10, had sand 2,205-25 feet, and made 50 bbls. naturally; No. 8, SE cor. NW, Section 24-17-10, is flowing 250 bbls. from sand 2,445-46 feet; No. 1, NW cor. SE, Section 24-17-10, made 3,550 bbls. the first 24 hours from sand 2,470-95 feet; No. 9, NW cor. SE SE, Section 24-17-10, is drilling at 900 feet. H. C. Wilson is drilling at 685 feet in No. 1, NW cor. SW SW, Section 26-17-10.

Near Bristow, the Jomack Oil Co.'s No. 4, NE cor. NW SE, Section 28-16-9, had sand 2,939-3,043 feet, and made 8 bbls. naturally. Peerless Oil Corp.'s No. 1, NW cor. NE, Section 12-16-11, had a total depth of 2,286 feet and was plugged back to 1,821 feet and is making 2,500,000 feet of gas and 5 bbls. of oil.

Skelly Oil Co. has a rig up for No. 5 Fields, CWL SE SW, Section 30-15-9. The Carter Oil Co.'s No. 1, NE cor. SE NW, Section 31-15-9, had sand 2,310-56 feet; was shot with 80 quarts and made 20 bbls. C. G. Tibbens' No. 1, SE cor. NE NW, Section 5-14-9, had sand 3,080-96 feet, and made 45 bbls. naturally. O. M. Evans' No. 1, NE cor. SE, Section 5-14-10, is dry and abandoned at 3,185 feet. Noble & Lansing have spudded No. 1, SW cor. SE SE, Section 17-14-10. Producers & Refiners Corp.'s No. 3, NW cor. NE SE, Section 18-14-10, is spudded. T. B. Slick has built a rig for No. 2 Scott, NE cor. NW NE, Section 20-14-10. Plymouth Petroleum Co.'s No. 1, SW cor. SE, Section 23-14-10, is drilling at 475 feet. Wood Oil Co. has a dry hole in No. 2, SE cor. NE SE, Section 30-14-10, which is dry and abandoned at 3,537 feet.

Bu-Vi-Bar Petroleum Co. has a dry hole at 3,225 feet in No. 2, SW cor. SE NW, Section 26-15-8. T. & P. Co. has completed No. 5, SW cor. SE NE, Section 12-14-8, for 5 bbls. in sand 2,363-2,400 feet. C. G. Tibbens' No. 2, SW cor. SE NE, Section 13-14-8, is drilling at 750 feet; No. 11, NE cor. NW NE, Section 13-14-8, had sand 2,370-2,414 feet and made 30 bbls. after a shot of 100 quarts.

Spudded In

Bu-Vi-Bar Petroleum Co. has spudded No. 1, SE cor. SW NW, Section 11-17-8. Savoy Oil Co. has a rig up for No. 3 Walker, SE cor. NE NW, Section 23-17-8. Barnsdall Oil Co. has spudded No. 3, NW cor. SW SW, Section 26-17-8. Knight and others' No. 1, SW cor. SW NW, Section 26-17-8, had sand at 2,317-32 feet and made 6 bbls. naturally. Interocean Oil Co.'s No. 4, SW cor. NE NE, Section 27-17-8, had sand at 2,795-2,827 feet and flowed 65 bbls. the first 12 hours. Wilcox & Whitten have a rig up for No. 2, SW cor. SE NW, Section 11-17-10. O. M. Ireland has built the rig for No. 1 Baker, NE cor. NW SW, Section 11-17-10. R. O. Bailey is drilling at 1,600 feet in No. 1, SE cor. NE SE, Section 12-17-10. Brooker & Warren have a rig up for No. 2 Dawson, SW cor. NW SW, Section 24-17-10. Pioneer Petroleum Co.'s No. 5 Bucktrot, NW cor. SW NE, Section 24-17-10, is rigging up to drill deeper; No. 6 Bucktrot, SW cor. NE, Section 24-17-10, had sand at 2,437-62 feet and is flowing 65 bbls. an hour; the rig is up for No. 7 Bucktrot, SW cor. NW NE, Section 24-17-10; the rig is on the ground for No. 8 Bucktrot, CSL SW NE, Section 24-17-10. J. H. Wright has a rig on the ground for No. 12 Dawson, NE cor. NW, Section 24-17-10; No. 5 Tah-Kah Ney, NE cor. SE NW, Section 24-17-10, is flowing 75 bbls. an hour from sand at 2,402-24 feet; No. 8, SE cor. NW, Section 24-17-10, is holding up at 800 bbls. daily from sand at 2,445-96 feet; the rig is up for No. 9, CNL SE NW, Section 24-17-10; No. 1, NW cor. SE, Section 24-17-10, had sand at 2,470-95 feet and is flowing 2,390 bbls. daily. Independent Oil & Gas Co.'s No. 1, NW cor. NE NW, Section 30-17-10, had sand at 2,092-2,120 feet and made 15 bbls. after a shot of 100 quarts.

S. E. Benson and others have completed No. 1-A, NW cor. NE, Section 5-18-12, for 10 bbls. after a shot of 30 quarts in sand at 2,340-63 feet. Day Brothers' No. 1-A James, NW cor. SW NE, Section 6-18-12, is having casing trouble at 1,540 feet. Sunray Oil Co. is rigging up No. 6, NE cor. NW, Section 6-18-12; Sunray Oil Co. and others' No. 5, SW cor. SE NW, Section 6-18-12, had sand at 2,139-40 feet and made 90 bbls. oil and 100 bbls. water, and is now making 20 bbls. oil and a little water; No. 6 Sango, C south half SE NW, Section 6-18-12, is drilling at 1,250 feet.

R. G. Jennings has built the rig for No. 1 Tiger, NW cor. SE, Section 36-15-7. Prairie Oil & Gas Co. is rigging up No. 5 White, NE cor. NE, Section 11-14-8. Haskell Oil Co.'s No. 8, SW cor. SE NW, Section 12-14-8, had sand at 2,435-70 feet and made 45 bbls. naturally. It was shot with 80 quarts and made 70 bbls. Mid-Continent Petroleum Corp.'s No. 5, SW cor. SE NW, Section 32-14-10, had sand at 3,420-92 feet and made 150 bbls. naturally. It made 190 bbls. after a shot of 30 quarts.

Grady County

Sinclair Oil & Gas Co.'s No. 4, CEL NE SE, Section 22-5-8w, had broken sand 2,080-2,403 feet, and is estimated at 25,000,000 feet of gas. Gant and others' No. 1-A Mutz, C NW NE, Section 19-5-7w, is a rotary rig. Sinclair Oil & Gas Co.'s No. 1, SE cor. NW, Section 5-3-5w, is drilling at 2,830 feet. Magnolia Petroleum Co.'s No. 1, NE cor. SW SW, Section 27-3-5w, had sand 1,632-37 feet, and 1,652-75 feet and made 33 bbls. on the pump. Prairie Oil & Gas Co.'s No. 2, C SE NE, Section 3-4-8w, had broken sand 2,087-2,137 feet and is completed with 9,500,000 feet of gas.

Caddo County

Briscoe & Hall's No. 2, SE cor. SW SE, Section 31-6-9w, had broken sands 1,880-2,255 feet and flowed 100 bbls. English & Jacobs are drilling at 200 feet in No. 4, NE cor. SE SE, Section 31-6-9w. Magnolia Petroleum Co.'s No. 2 Stevens, NW cor. NW, Section 5-5-9w, is drilling at 250 feet. Gorton Trust's No. 5, SE cor. NE SW, Section 12-5-9w, had oil sand 1,110-20 feet and is drilling at 1,539 feet.

Kay County

The Carter Oil Co.'s No. 1, NE cor. NW NE, Section 29-29-1, is dry at 3,720 feet. Twin State Oil Co.'s No. 1, SE cor. NE NW, Section 31-27-2, had sand 2,477-90 feet and made 30 bbls. after a shot of 15 quarts.

Comar Oil Co. has built the rig for No. 1-W Brown, SW cor. SE, Section 16-29-1w. Mid-Continent Petroleum Corp. has built the rig for No. 1-A School land, SE cor. SW, Section 16-29-1w. The Texas Company has a rig on the ground for No. 1-A Day, SE cor. NE, Section 20-29-1w; and for No. 3 Day, NE cor. SE NE, Section 20-29-1w. Comar Oil Co. has built the rig for No. 9 Pribboth, NW cor. SW NW, Section 21-29-1w; No. 10, NW cor. SW, Section 21-29-1w, is drilling at 650 feet; No. 5 Pribboth, NE cor. NW, Section 21-29-1w, is rigged up; No. 7, SW cor. NW, Section 21-29-1w, had sand 3,388-3,431 feet and made 2,400 bbls. initially and is now making 1,400 bbls.; No. 1 McCullough.

(Continued on Page 121)

GOOD PRODUCTION BY SWABBING MADE IN SUMNER COUNTY, KANSAS

By J. L. Dwyer

The swab dominated activities in the Sumner region of Kansas last week when the Roxana Petroleum Corp. had two wells making good production by this method.

The Roxana's No. 1 Miller, NE cor. SW, Section 17-32-2, has what is likely to be proved the Wilcox sand at 3,642-71 feet, and is making 750 bbls. daily. Roxana's No. 1 Churchill, NE cor. SW, Section 25-31-2, had a sand which is thought to offer good correlation with the Stalnaker or Tonkawa sand at 1,855-63½ feet and made 255 bbls. on the swab. The latter well is merely being tested out and is still in the 10-inch hole. If good production be found in the Churchill well at this comparatively shallow depth, it will stimulate activity there, and should prove an attractive proposition.

Both of these wells are said to be the result of extensive core drilling along the axis of the granite ridge which runs southwest from the old Towanda Field in Butler County. The Roxana Corp. has done a great amount of coring in this area, and the results obtained to date may be the cause of much work in a section which has long been under lease. Sumner County has been in a peculiar position. Well leased, it has been very difficult for independent operators to finance the drilling of promotion wells in this territory, and yet it is a region in which much confidence is reposed.

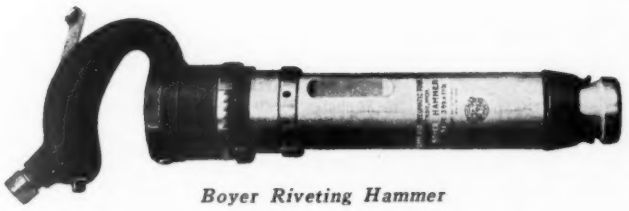
Greenwood County

Manhattan Oil Co.'s No. 14, NW cor. SE NE Section 25-23-8, had sand 2,547-78 feet and made 80 bbls. after a shot of 60 quarts; the rig is up for No. 2 Scott, SW cor. NW SE, Section 25-23-8. Skelly Oil Co.'s No. 3, SW cor. NE NE, Section 15-23-9, is drilling at 750 feet. O. V. Paul and others' No. 1, SW cor. SE SW, Section 17-23-9, is drilling at 750 feet. Empire Gas & Fuel Co.'s No. 5, SE cor. SW NE, Section 19-23-9, is drilling at 450 feet. White Eagle Oil Co. and others' No. 1, SW cor. NE SE Section 19-23-9, is drilling at 700 feet.

Ralph Day and others' No. 2, SW cor. SW, Section 1-22-10, is drilling at 1,100 feet; No. 2, SW cor. SE SW, Section 1-22-10, had sand 2,034-2,107 feet and made 750 bbls. after a shot of 280 quarts; the rig is up for No. 3 Fuller, NW cor. SE SW, Section 1-22-10. Manhattan Oil Co. has spudded No. 1, SW cor. NE SW, Section 1-22-10. Syndicate Oil Co. has the rig up for No. 3 Fuller, NW cor. SW SW, Section 1-22-10; the rig is up for No. 2 Bransfield, NE cor. SW SW, Section 2-22-10. Empire Gas & Fuel Co. is drilling at 1,250 feet in No. 8, SE cor. NW, Section 6-22-10. Kansan Oil Co. is drilling at 500 feet in No. 4, SW cor. NE, Section 6-22-10. Theta Oil Co.'s No. 10, NE cor. SW SE, Section 8-22-10, had sand 2,278-2,361 feet and made 50 bbls. after a shot of 120 quarts; No. 11, NE cor. SE SW, Section 8-22-10, had sand 2,302-53 feet and is good for 75 bbls. after a shot of 60 quarts. Hazlett and others are drilling at 1,500 feet in No. 18, SW cor. NW SE, Section 12-22-10; No. 19, NE cor. NW SE, Section 12-22-10, is drilling at 800 feet. Manhattan Oil Co. is drilling at 675 feet in No. 4-A, NE cor. NW NE, Section 12-22-10. Prairie Oil & Gas Co. has spudded No. 4, NW cor. NW, Section 12-22-10; the rig is up for No. 5 Fechter, SW cor. NW NW, Section 12-22-10. Sinclair Oil & Gas Co.'s No. 40, CSL NW SE, Section 19-22-10, is dry and abandoned at 2,643 feet; No. 42, C SW SW, Section 20-22-10, is drilling at 1,400 feet. Tidal Oil Co.'s No. 4, CWL SW NW, Section 29-22-10, had sand 2,416-66 feet and made 200 bbls. after a shot of 100 quarts. Prairie Oil & Gas Co.'s No. 2, SW cor. NW NE, Section 1-23-9, had sand 2,425-69 feet and made 20 bbls. after a shot of 160 quarts. Ward McGinnis is drilling at 650 feet in No. 3, NW cor. SW SW, Section 11-23-9; and No. 4, SW cor. NW SW, Section 11-23-9, is spudded.

Rhodes & Able have a rig up for No. 1 Marshall, NE cor. SW, Section 25-23-9. Roth Faurot and others are drilling at 400 feet in No. 8, NE cor. SW, Sec-

(Continued on Page 119)



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Louisiana-Arkansas Wildcat Failures

Sharp Fall in Production Largely in Smackover Where Third Sand Wells Show Small Decline. Leasing Activity Continues

By James H. Dameron
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 21.—Coincident with a general drop in new production throughout the entire Louisiana-Arkansas district, failure of wildcats to unearth anything of an exciting nature and a sharp fall in production, was a marked increase in wildcat work in both states. Although the bulk of the wildcatting is being done in Louisiana, and especially along the Caldwell-Angelina flexure, Grant and Winn Parishes both showed big gains in wildcat activity while in Arkansas the prolific Union County is being tested in spots passed up heretofore because of the excitement in the world's biggest oil field.

Along the flexure in Louisiana five more shallow tests registered in the failure column, but, as if in definance, undaunted operators redoubled their efforts in search of oil along that general area.

Lease trading in that area shows no signs of weakening and three more big blocks are reported to be almost complete. The Humble Oil & Refining Co., which is leading in the wildcat work and has thousands and thousands of acres on the flexure under lease, is reported to be taking over a block estimated to contain 15,000 acres in Sabine Parish. The acreage is being taken from the Sabine Lumber Co. with an obligation to drill a test every 2,000 acres, according to reports. In Sabine County, Texas, the Humble has assembled a 187,000-acre block.

The Magnolia Petroleum Co. also is active in Sabine Parish and is reported to be closing a deal for a block of the Long Leaf Lumber Co.'s holding in that area. It is reported the acreage is being taken with a drilling obligation, presumably one test to every 2,000 acres.

Keisker and Simon, wildcat operators in the district, are working on a 10,000-acre block in Sabine and are reported to have about blocked all of their acreage. Land men of the various companies interested, which includes almost every company, are combing the territory. Some are after big blocks while others are picking up scattered eighties and quarter sections. Scouts and geologists are keeping close tab on every test and are forced to drive many miles in the course of a day's work.

Arkansas Acreage

In Arkansas the blocks are not near the size of those in Louisiana but interest is as keen. Burch Sweatman has a 1,000-acre block centering around Section 9-17-14 and is obligated to drill a test to be commenced within 60 days. Grimes and Jones have assembled a 500-acre block centering around Sections 11 and 12, Township 18 and Range 15. Murphy Land Co. is assembling a 1,000-acre block centered around Section 16-18-16. C. H. Murphy and Eddie Jones are reported to have completed their 4,000-acre block centering around Section 27-19-14, and are planning to sink a 3,000-foot test on the block.

In the proven fields little of an exciting nature happened. In Smackover Lion Oil & Refining Co.'s No. 8 Flenniken, Section 10-16-15, possibly is proving a new producing horizon. The well had sand at 2,676-80 feet and is flowing 100 bbls. daily by heads from that sand. Operators are coring at 2,680 feet.

Lisbon sailed through the week without creating any excitement. H. L. Hunt's No. 1 Murphy, Section 4-17-16, has been County, Arkansas, recorded one producer completed in the extreme north end of the pool and is making 12 bbls. daily. Operators are spreading out to the west in Sections 17 and 8 in search of Lisbon pay.

The tricky Bradley Pool in Lafayette and a diagonal offset failure. Two other Blossom sand tests are going down in Lafayette, one is being drilled by the Gulf and the other by The Texas Company.

De Soto Parish got a flurry of excitement when Matthews' No. 1 Tarver, Section 30-12-11, in the old Neighborton district, came in 200 bbls. strong. The excitement was short lived and the well is now making around 15 bbls. daily.

Urania's interest is focussed on the plans of outside companies reported to have their eyes on Urania crude. Crystal Oil Refining Corp., Shreveport, is reported to be after a tank farm site in Urania and officials of the Lion Oil & Refining Co., El Dorado, are reported to be showing an interest in Urania. Natural Gas & Fuel Corp. is surveying for gathering lines in the Urania Field and is building on its tank farm site.

Two Disappointments

South of Urania and in the Georgetown district Gulf Refining Co. abandoned No. 1 Swope, Section 18-9-1e, at 2,194 feet. The Gulf's Swope was one-half mile north of Dowling and McCurry's No. 1 Swope which was completed making 15 bbls. of oil and 300 bbls. of salt water. Gulf is reported to be planing an offset to the Dowling and McCurry well in search of the potential pool believed to exist in that area.

Disappointment in Webster Parish was the Magnolia's No. 1 Bible, Section 8-20-9, which was junked at 4,281 feet. For more than a month drillers have worked to mill out junk at the bottom of the hole. In Claiborne Parish the cement plug has been drilled out at 4,164 feet at Triangle Drilling Co.'s No. 1 Keen, Section 7-19-5, and the casing is being bailed.

One of the important deals of the week was the purchase by the Southern Crude Oil Purchasing Co., Shreveport, of ten 55,000-bbl. tanks in the Louann district in Smackover. The Southern is reported to have paid $10,000 for each tank. It is also reported the Southern is in the market for light oil which it plans to run in storage.

New Production Drops

The drop in new production was general throughout the entire week. In all 36 completions were reported. Twenty-one were oil wells with a combined production of only 2,010 bbls. Arkansas contributed only 701 bbls. to the total and a few barrels of that came from the Smackover Field. Twelve of Arkansas' completions were oil wells, 1 was a gasser and 6 were failures, 3 in shallow sands and three deep sand tests.

In Louisiana Urania accounted for 900 bbls. of the State's 1,309 bbls. of new production from the nine wells completed. One gas well was completed in Caddo and six failures were abandoned in shallow sands and one deep test was junked at 4,300 feet.

Because of a 5,500-bbl. daily average loss in Smackover heavy the production of the two states dropped off sharply, 6,800 bbls. during the week. No cause could be attributed to Smackover's 5,500-bbl. loss other than a great number of third sand wells each showed a small decline in daily average production. Only two other fields in Arkansas lost, one being Lisbon and the other Nevada. El Dorado showed a gain as did Stephens and Smackover light pick up considerably.

Louisiana's daily average loss was 1,440 bbls. and while the daily average production of the State was going down Louisiana lost two pools from the list of pools making 10,000 bbls. or better. One was the Caddo light oil field which recently went into that class when the Gulf completed a 1,500-bbl. well on the Ferry Lake lease and the other was the Haynesville Field which lacked only 25 bbls. daily to stay in the big money class. Louisiana's big loss came from Urania which went down 800 bbls. All other fields in that State save Elm Grove showed slight decreases in daily average production.

Production By Fields

Louisiana	
Bellevue	2,400
Caddo light	9,340
Caddo heavy	2,765
Cotton Valley	8,520
De Soto and Red River	3,825
Elm Grove	615
Haynesville	9,975
Homer	5,690
Urania	15,630
Total	59,260
Arkansas	
Smackover heavy	126,060
Smackover light	17,025
El Dorado	8,970
Lisbon	10,340
Nevada	2,640
Stephens	1,885
Total	166,860
Total both states	226,120
Total last week	232,930
Difference	6,810

Louisiana—LaSalle Parish

Completions in Urania during the week were of routine character. Five completions were recorded in the LaSalle Parish side of the field and one in Winn Parish. Two of the completions were dry holes and four wells had a combined production of 900 bbls.

The big well of the week was O. W. Clark's No. 3 Harper, Section 26-10-1e, Winn Parish, which was finished up in broken sand at 1,478-97 feet flowing 400 bbls. daily. Back in LaSalle Parish, Arizola Petroleum Co.'s No. 8 Tannehill, Section 36-10-1e, is making 100 bbls. naturally from 5 feet of sand topped at 1,545 feet. Keene & Woolf's No. 4 Urania, Section 19-10-2e, flunked out at 1,537 feet when salt water sand was cored. The other failure in the field was Louisiana Oil Refining Corp.'s No. 7-A Tremont, Section 4-9-2e, abandoned in salt water sand at 1,667 feet. Natural Gas & Fuel Corp., extensive operators in Urania, completed two, each making 200 bbls. naturally. The first was No. 3-E Urania, Section 18-10-2e, producing from sand at 1,509-14 feet and the other is No. 1-F Urania, Section 24-10-1e, which had the sand at 1,545-50 feet.

Operations in LaSalle Parish have increased to about two score. Ayers and associates' No. 1 Miller, Section 31-11-2e, is coring green sand at 1,528 feet. Cherokee Petroleum Co.'s No. 2 Louisiana Central, Section 19-11-2e, cored white sandy shale at 1,542-48 feet and Cherokee's No. 3 Louisiana Central, Section 33-10-3e, is down 400 feet. O. W. Clark's No. 2-D Russell, Section 25-10-1e, is drilling at 1,250 feet. Cox and associates' No. 2 Herbert, Section 26-10-1e,

BRADLEY POOL, ARKANSAS, SHOWS AN UNUSUAL SAND CONDITION

By James H. Dameron

SHREVEPORT, La., June 21.—In the southern part of Lafayette County, Arkansas, and close to the Louisiana line is a Blossom sand pool that has thus far proved puzzling and none too encouraging to lease owners there.

It is the Bradley Pool in Section 18-19-24 and one-half mile east of Bradley in Section 13. And the question uppermost in the minds of those interested there is which way will the pool go if good production is in that immediate vicinity waiting for a wildcatter's bit to tap it.

A glance at the map of the producing area makes it look anything but promising. For miles around the country is low and flat. The Gulf Refining Co. spent six months in getting material and equipment on a lease for a wildcat test 4 miles east of Bradley. The delay was caused by the difficulty in getting through the country.

At present the field has three producing wells all in a row running directly north and south and the south well is one-half mile from the north well. But production row is flanked on either side by dry holes.

Elevation Differs Two Feet

All of the wells are owned by the Arkansas Fuel Oil Co. and their daily average production is around 400 bbls. The Blossom sand is found around 2,780 feet. Of the three oil wells and three dry holes in Section 18 the difference in elevation in each well is about two feet. The Arkansas company's wildcat discovered the area and the Arkansas has carried on all of the development there. Because of the peculiarities of the new area operators have pursued an extremely cautious development policy.

The oil tests 26.7 gravity. Each producing well is making a quantity of salt water but the oil separates easily and the water encroachment so far has not proven a serious menace to the producing wells. Oil is stored in field storage, some of it being used for fuel and the other is run to Bradley through a small line and loaded in tank cars.

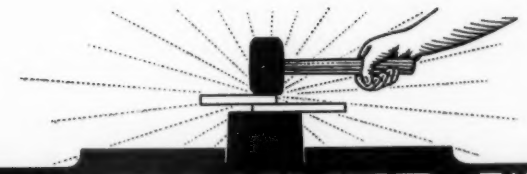
Several years ago Keene & Woolf drilled a 3,000-foot test in the NE NW NE, Section 21-19-24. It was abandoned at 3,016 feet when salt water drowned out the oil showing. Nothing happened in that immediate vicinity until the Arkansas completed No. 1 P. M. Allen, SE SW, Section 18-19-24, November 22, 1925, at 2,786 feet. It was completed making 20 bbls. of oil and 250 bbls. of salt water when put on the pump. Since then the well has been worked over and its production has increased to 60 bbls. of oil and about 500 bbls. of salt water.

Used Compressed Air

The operating company then went due north one-half mile and drilled No. 1 Red River Lumber Co., SE NW, Section 18, completing it at 2,780 feet. Instead of putting the well on the beam the company did some experimenting and produced the well with compressed air. It started off making 150 bbls. of oil and a big batch of salt water. The well is still being produced with air and its production is holding up.

After the completion of that well cold water has been thrown on the area several times in the past few months because of the failures. The third test was Arkansas' No. 2 P. M. Allen, NW NE NW, Section 19-19-24, a diagonal southwest offset to the discovery well. It made a showing for a 5-bbl. well but salt water killed its chance of being com-

(Continued on Page 90)



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is shut down at 500 feet. Six-inch casing is being set at 1,528 feet at Dixie Oil Co.'s No. 6 Urania, Section 24-10-1e. Hardtner Oil Co.'s No. 5 Urania, Section 7-10-2e, is being bailed to test 9 feet of sand topped at 1,528 feet. A. E. Hudson's No. 4 Urania, Section 7-10-2e, is drilling at 300 feet. Hunt and associates' No. 12 Tullos Heirs, Section 26-10-1e, is in sand at 1,490-96 feet, waiting for standard rig and 6-inch was set at 1,486 feet at No. 13 Tullos Heirs. Hunt, McCurry & Zoder's No. 2 Urania, Section 7-10-2e, is bailing to test 9 feet of sand topped at 1,509 feet.

Louisiana Oil's Work

On the Louisiana Oil Refining Corp.'s leases, No. 8-A Tremont, Section 35-10-1e, is bailing to test sand at 1,540-47 feet; No. 5-B Tremont, Section 25-10-1e, is in sand at 1,541-45 feet waiting for a standard rig; No. 19-B, Section 25-10-1e, is drilling at 1,195 feet. Six-inch was cemented at 1,520 feet at Love and associates' No. 4 Zimmerman, Section 25-10-1e. McGaha and associates' No. 1 Urania, Section 7-10-2e, is drilling at 700 feet. Montague Oil Co.'s No. 2 Zenoria Lumber, Section 11-9-1e, in the extreme south end of the field, is drilling at 1,250 feet. W. T. Murray's No. 2 Doughty, Section 36-10-1e, formerly Cleve Love's lease, is drilling at 800 feet.

Natural Gas & Fuel Corp. has 13 operations in the field. No. 1 Cockerham, Section 36-10-1e, tested salt water with a show of gas at 1,083 feet, cored oil sand at 1,509-13 feet and is setting casing. No. 4-E Urania, Section 18-10-2e, had the sand at 1,506-14 feet and is waiting for a standard rig. Six-inch casing was cemented at 1,505 feet at No. 5-E, at 1,495 feet at No. 6-E, and at 1,515 feet at No. 7-E; No. 8-E is drilling at 900 feet. No. 2-F Urania, 200 feet south and west NE cor. SE SE, Section 24-10-1e, is a derrick; No. 1-K Urania, Section 18-10-2e, is coring at 1,532 feet; surface casing was set at 100 feet at No. 2-K and No. 4-K Urania, 200 feet north and west SE cor. SW SE, and No. 5-K Urania, 200 feet north and east SW SW SE, both in Section 18-10-2e, are derricks.

Nelson and associates' No. 1 Doughty, Section 36-10-1e, formerly Harris and associates' No. 1, is drilling at 800 feet. Robinson & Long's No. 1 Louisiana Central, Section 6-10-2e, is spudding. Standard Drilling Co.'s No. 1 Cruse, Section 30-11-4e, formerly reported in Caldwell Parish, is about ready to resume drilling at 1,150 feet. Ten-inch casing was set at 73 feet at Standard Oil Co.'s No. 1 Cockerham, Section 36-10-1e. Rigs are up for Tunica Petroleum Co.'s wildcats in LaSalle, No. 3 L. & A. is in the NW NW NE Section 19-9-2e, and No. 4 L. & A., NW cor. SE SE, Section 15-9-3e. Surface casing was set at 100 feet and George W. Wetherbee's No. 1 Urania, Section 2-9-1e, is drilling ahead at 400 feet.

Bossier Parish

Arkansas Fuel Oil Co.'s No. 1 Murray, Section 14-23-14, is drilling through hard shale at 3,666 feet. Benton Syndicate's No. 1 Bulkley, Section 9-20-13, is coring at 1,210 feet. Doern and associates' No. 1 Bollinger, Section 9-22-11, is going through lime at 2,020 feet. Eight-inch casing was set at 112 feet at The Texas Company's No. 1 Moon, NW cor. Section 13-19-11. Woodley & Collins' No. 1 L. & A., Section 14-23-12, Carterville district, is shut down at 2,721 feet.

Caddo Parish

Two more wells were added to the Gulf's famous Ferry Lake lease. No. 233, Section 16-20-16, was completed at 2,283 feet making 54 bbls. daily on the pump. No. 235, Section 15-20-16, is flowing 70 bbls. daily from 2,263 feet. Near Hosston R. B. Nelson's No. 1 Files & Shanks, Section 24-22-15, was finished at 1,050 feet making 300 bbls. on the pump. The Texas Company's No. 7 J. K. Herold, Section 14-21-15, was put on the pump at 1,650 feet and is making 55 bbls. daily. Woodley & Collins' No. 2 Knight, Section 35-16-12, is a 10,000-foot gas well in broken sand at 1,908-51 feet.

W. D. Chew's No. 4 State, Section 34-21-16, is being rigged, and Chew's No. 1-A Caddo L. B., Section 9-20-16, is drilling at 1,550 feet and his No. 4 fee, Section 33-21-16, is waiting for a standard rig at 1,850 feet. Dixie Oil Co.'s No. 1 Jolly, Section 27-22-15, is going through lime at 4,103 feet. Dixie's No. 16 Muslow, Section 7-20-15, is being bailed to test at 2,257 feet. Fourteen-inch casing was set at 100 feet at Dixie's No. 77 Robertshaw, Section 14-21-15, and the test is drilling at 400 feet. The six-inch plug is being drilled out at 885 feet at Gilliam Syndicate's No. 1 Cummings, Section 20-21-14. Plug is being drilled out at 2,100 feet at Galloway and associates' No. 1 Burglass, Section 15-21-16. Gulf's No. 1 J. M. Byrd, Section 2-19-14, is boring through gray lime and shells at 2,547 feet. On the Ferry Lake lease in Section 16-20-16, No. 236 is bailing to test at 2,286 feet; No. 237 has 1,050 feet of oil in the hole at 2,287 feet and is waiting for a standard rig; No. 242 is a derrick.

On the Gulf's Ferry Lake lease in Section 15, No. 240 is drilling in blue shale at 930 feet; surface casing was set at 162 feet at No. 241; a derrick is being built for No. 246, and No. 247, 2,220 feet north and 300 feet east SW cor. is a derrick pattern. Six-inch was cemented at 2,150 feet at No. 238, Section 21, and at 2,150 feet at No. 239, Section 22. Gulf's No. 1-E Muslow, Section 35-21-15, is drilling in lime at 3,776 feet and No. 12 Tyson, Section 14-21-15, is in blue shale at 3,870 feet and going ahead. Lewis Oil Corp.'s No. 15 D. H. Raines, Section 22-21-15, is drilling at 1,360 feet and a derrick is up for the same company's No. 7 Vespy, Section 15-21-15.

Magnolia's Lease

On the Magnolia Petroleum Co.'s Dillon lease, Section 24-21-15, No. 16 is drilling at 2,340 feet and No. 17 is drilling in broken lime at 2,391 feet. Magnolia's No. 1 Speel, Section 29-21-15, is still in lime and is going ahead at 3,146 feet. A derrick is up 1,350 feet east and 950 feet south NW cor. Section 18-17-16, for Magnolia's No. 1 Waterman Lumber Co., and Magnolia's No. 1 Wiley Bradford, Section 24-21-15, is going through gummy lime at 3,644 feet. McGoldrich and associates' No. 9 Murry, Section 14-21-15, is being rigged. Murphy & Jones' No. 1 Youree-Randolph, Section 13-20-15, is drilling at 1,400 feet. Six-inch casing was cemented at 1,030 feet at R. B. Nelson's No. 2 Files & Shanks, Section 24-22-15.

Ohio Oil Co.'s No. 1 Ardis, Section 1-21-15, is fishing at 4,656 feet. Page & Caldwell's No. 1 Hobbs, Section 29-21-15, is shut down at 2,240 feet. Standard Oil Co.'s No. 1 Bettie S. Youree, Section 13-20-15, was bailed dry at 2,272 feet and 10 inches where a light showing of oil was found. It was drilled on to 2,300 feet and run into salt water sand. The liner is being pulled and the test will be drilled deeper. The Texas Company's No. 47 C. M. L. Co., Section 23-21-15, is drilling in white lime at 2,867 feet. Six-inch was set at 2,190 feet at The Texas Company's No. 62 Caddo L. B., Section 33-21-16. The Texas Company's No. 63 Caddo L. B., Section 14-21-16, had sand at 991 feet and 8-inch casing was cemented at 987 feet. A derrick is being built for The Texas Company's No. 4 Chew fee, Section 33-21-16. The Texas Co.'s No. 53 S. P. Harrel, Section 2-21-16, is bailing to test casing at 1,045 feet. A rig is up for the same company's 7-A Hobbs, 400 feet south and west NE cor. NW, Section 28-21-15, and No. 3-B Hobbs, Section 21-21-15, is drilling at 735 feet. Tholl Oil Co.'s No. 10 Bashara, Section 23-21-15, is drilling at 960 feet and Tholl's No. 9 Huckaby, Section 14-21-15, is drilling at 1,220 feet. A rig is up for Woodley Petroleum Co.'s No. 3 Knight, Section 35-16-12.

Caldwell Parish

Cherokee Petroleum Co.'s No. 1 Louisiana Central, Section 10-11-2e, is shut down at 1,515 feet for orders. Casing was not cemented at 1,656 feet at Chal Daniel's No. 1 Lively, Section 6-12-4e, but lowered in the hole. The test is in the Long Lake district and it is reported to have 5 feet of sand topped at 1,656 feet. Grant & Pipes' No. 1 Cruse, Section 6-11-4e, is drilling in packed sand at 1,160 feet. A derrick is up 990 feet east and 330 feet north SW cor. Section 9-11-3e, for Humble's No. 1 Louisiana Central. Wright and associates' No. 1 Love, Section 16-11-2e, is drilling in rock at 1,515 feet.

Claiborne Parish

Brown and associates' No. 1 Beard, Section 28-19-5, is drilling in sandy shale at 2,500 feet. Gilliland Oil Co. and Ramsey's No. 1-D Taylor, Section 14-23-8, is drilling in hard gray lime at 3,933 feet. Standard Oil Co.'s No. 35 Lowenberg, Section 24-21-6, is drilling at 1,159 feet. Triangle Drilling Co.'s No. 1 Hollayfield, Section 32-23-5, cored hard shale with streaks of sand at 2,800 feet.

DeSoto Parish

A. H. Tarver's No. 1-B Matthews, Section 29-12-11, caused a flurry of excitement when it came in making 200 bbls. from 2,687 feet. The liner was set at 2,853 feet at J. P. Evans' No. 1 Sutherlin, Section 20-12-14, to test 3 feet of sand. The hole was bailed down to the top of the liner without anything showing. Magnolia's No. 1 Bond, Section 27-12-11, passed the 3,000-foot mark and is in lime at 3,050 feet. J. C. Walton's No. 1 Chaffraix, Section 36-12-11, has resumed drilling and is down 2,020 feet.

Grant Parish

Three Caldwell-Angelina flexture tests passed out of the picture last week. The first was Gulf Refining Co.'s No. 1 Swope, Section 18-19-1e, near Georgetown, which was abandoned at 2,194 feet. Humble Oil & Refining Co. drilled two into salt water sand and gave them up. No. 2 L. & A., Section 3-9-1w, was abandoned at 1,526 feet and No. 4 L. & A., Section 6-9-1w, was abandoned at 1,511 feet.

Bradley & Cozart's No. 1 Holmes, Section 16-9-1e, is ready to resume drilling after cleaning up a fishing job at 1,330 feet. Humble's No. 5-A L. & A., Section 16-9-1w, is rigging and No. 6-A L. & A, Section 8-9-2w, is drilling at 1,375 feet. Four new locations were staked in Grant Parish by the Humble. No. 8-A L. & A., 990 feet north and west SE cor. Section 15-9-2w; No. 9-A L. & A., 1,320 feet west and 330 feet north SE cor. Section 27-9-1w; No. 10-A L. & A., 1,320 feet north and west SE cor. Section 13-9-2w, and No. 11-A L. & A., 1,320 feet south and west NE cor. Section 20-9-2w. Tunica Petroleum Co. has a rig up 660 feet south and 200 feet east NW cor. NE SW, Section 20-9-1e, for No. 1 L. & A., and location has been made for Tunica's No. 2 L. & A., SW cor. NW NE, Section 32-9-1e.

Monroe District

The Monroe gas field passed up the week without adding any new producers but drilling operations showed a gain as the usual summer development campaign progressed. Hatcher & Evans' No. 4 fee, Section 17-19-4e, is drilling at 1,250 feet. Eight-inch casing was cemented at 915 feet at J. M. Huber's No. 3 Banks, Section 36-19-4e. Maury Drilling Co. is still fighting a stubborn blowout at 1,290 feet at No. 3 McErwin, Section 20-19-4e. Twelve and one-half inch casing was set at 186 feet at R. J. O'Brien's No. 1 Ray & Green, Section 2-18-4e.

Palmer corporation's No. 3, Section 24-19-4e, is waiting for the 6-inch casing to set at 2,177 feet. Palmer's No. 2 Milsap, Section 25-20-4e, is drilling at 100 feet. The plug at 2,108 feet is being drilled out at United Carbon Co.'s No. 2 Wilson, Section 24-20-4e. Eight-inch casing was cemented at 856 feet at Southern Carbon Co.'s No. 4 Grayling, Section 28-21-4e, and No. 5 Grayling, Section 21-21-4e, is drilling at 110 feet. Eight-inch casing was cemented at 852 feet at South-

(Continued on Page 115)

MALJAMAR LIKELY GOOD PRODUCER WITHOUT A SHOT, LATEST REPORT

By Special Correspondent

ARTESIA, N. Mex., June 19.—Spraying 50 bbls. daily, the Maljamar Oil & Gas Corp.'s No. 1 Baish in Lea County gives every indication of making a good producer without a shot. After passing through 5 feet of black lime from 4,065-70 feet, the bit went into a soft dark gray lime, the well being shut down at a depth of 4,085 feet. Turned into a 1,600-bbl. tank, the well made 35 bbls. in the first 16 hours and is noticably increasing daily. Most of this production, it is believed, is coming from the various streaks of sand lime encountered between 3,600 and 3,900 feet. The excellent showing of this wildcat has firmly convinced oil men in this section that big production will be found somewhere in its neighborhood and as a result an active drilling campaign will be underway within 60 days. The Maljamar interests alone will drill 11 wells.

Work is being rushed on the Skelly Oil Co.'s No. 1 test on the Lynch Permit, in the NE NE, Section 22-17-31. A steel derrick is being erected and a road built through the sands to the location, with actual drilling scheduled to start by June 30.

A contract has been closed by Bruce Sullivan of the Sullivan Refineries, to start a well in the SE SE, Section 1-18-31, this being on a location worked out by F. B. Van Horn, geologist, who formerly was with the United States Geological Survey.

To the west of the Maljamar, midway between it and the Artesia Pool, the Wooley-Jones' No. 1 on the Beeson Permit in the SE SE, Section 33-17-30, is also attracting attention, four good showings having been obtained, the last sufficient to cover the tools. Twenty-four hundred feet of 8-inch casing will be set as the red sand is expected to be picked up around 2,500 feet. It is from this formation that the gas was encountered in the Maljamar test, at 3,115 feet. This is the second hole to be drilled by the Wooley-Jones interests, the first having been lost at 1,700 feet.

In the Artesia Pool, one of the best wells completed in the north extension, was brought in by The Texas Company, its No. 5 in the NE of Section 8-18-28. The well is gauging 75 bbls. following a shot run from 2,265-79 feet and from 2,288-93 feet. This company apparently missed the pay in No. 5 on the Bobb Permit in the center of Section 17-17-28 which is shut down awaiting orders at a depth of 2,500 feet.

Flynn, Welch & Yates have a good producer in the No. 45, in NE SE, Section 21-18-28. A gauge taken of the production showed the well to be good for 100 bbls. in the first 12 hours.

On the west side of the field two more wells are nearing the pay, both of which should make good producers, the logs running true. These are the Picher Oil & Gas Corp.'s No. 3 in the SE of Section 12-18-27, which is drilling below 1,875 feet and the Hasenfuss & Donley No. 2 in the NE of Section 13-18-27.

Another test is to be started in the south end of the field, this being the Henderson, Dexter & Blair No. 1, a location having been made in the NW cor. Section 9-19-29.

A visit was made to the Artesia Field Monday by Walter Teagle, president of the Standard Oil Co. of New Jersey, W. S. Farish, president of the Humble Oil & Refining Co., Wallace E. Pratt, director Geological and land department, James Anderson, president of the Humble Pipe Line Co., and William Funk, director of the Carter Oil Co.

Eddy County

Colorado Drilling Co.'s No. 1 Irvin, in the SE SE, Section 8-16-27, fishing for set of jars at 1,400 feet, company being reorganized and operation to be resumed; Compton's No. 2 Mann Permit in Section 3-18-27, drilling below 1,200 feet; Cook-Ironsides' No. 1, NE Section 1-20-29,

(Continued on Page 90)

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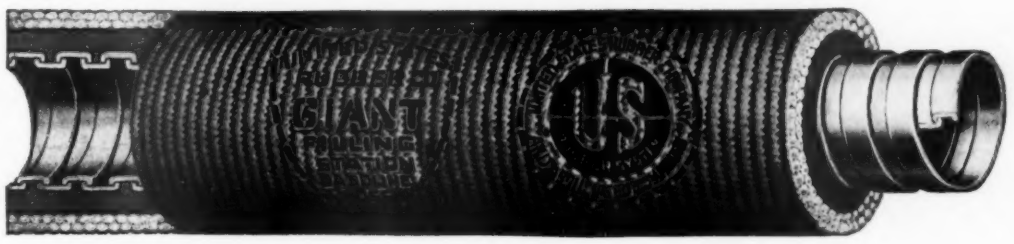

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XUM

Laredo Area Has Three Feature Wells

One Opens New Gas Field 5 Miles North Cole Field and Another Promises New Pool Along Reynosa Escarpment

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., June 21.—Three wells of the Simms Oil Co. in the Laredo territory are this week the feature of the situation in southwest Texas. Simms' No. 1 Dinn on Survey 666 in Duval County with a rock pressure of 620 pounds is liable to be a bigger gas well than reported in last week's The Oil and Gas Journal in the late news. It has opened a new field 5 miles north of the Cole Field at a total depth of 1,756 feet. Simms' No. 1 Leyendecker on Survey 143, Block 7, 4 miles south of the Randado Pool, has all the earmarks of a possible new pool along the Reynosa escarpment and Simms' No. 1 Weil, three-quarters of a mile north of nearest production in the Randado Field, has casing set after coring a sand with a good oil showing and if it makes a well will add a new and important situation to that field.

Simms' No. 1 Dinn, 5 miles north of the Cole Field in Duval County and near the Webb County line, had a rock pressure of 620 pounds to the square inch which is much greater than in the other gas fields. The well was bailed down a little and was then closed in and put on choker. It was not allowed to run wild till it had cleaned itself and is cleaning itself of the drilling fluid through a choker. Three days ago it gauged 7,800,000 feet and the volume of gas is steadily increasing, having been only about 3,000,000 at first. It is likely to make a big gas well.

Escarpment Theory

Simms' No. 1 Leyendecker is one of the most important wells in southwest Texas at this time. Simms Oil Co. representatives discovered that at every point where the Reynosa escarpment makes an important bend to the east there is an oil pool in that territory from the Randado Pool north to the Schott Pool at Mirando City. There are seven of these places where the Reynosa escarpment retreats to the east from the Randado Pool north and an oil pool at the mouth of each one of them. There are nine south of the Randado Pool and Simms has the land leased at each one excepting one. The test on the Leyendecker on Block 7 of Survey 143 is a further test of this theory and is at the next point south of the Randado where the escarpment is an old shore line, according to geologists, in the Rio Grande embayment. At points the action of the water has eroded it off more than others and at these points before the water receded there were bays and inlets. It is at the mouth of these bays that the oil has been found. At two points, one on the Wheatley lease in the Mid-Ojuelos, now owned by the Crown Central and on the Bruni tracts the line of production crosses the escarpment line up to the escarpment. It has been repeatedly argued that the escarpment itself had nothing to do with the location of oil, but nevertheless it is being found up and down the escarpment. The Leyendecker test on Survey 143 thus takes on new importance for every oil man is expecting new pools to be opened up in the territory south to the Rio Grande in Starr County. Simms drilled a well on Survey 233 a few months ago, about 2 miles northeast of the Leyendecker test. It got the Henne, Winch & Fariss Pool sand at 2,351 feet. The Leyendecker well has the same sand at 2,090 feet and allowing for difference in elevation got the sand at 223 feet higher than in the test on Survey 233. It thus has a structural condition to its advantage.

The Weil well on Block 16 of Survey 81 is an offset to the north of Survey 291 on which most of the production of the field is located. Simms has the northwest quarter of Survey 291 and the nearest production to the Weil well is on the south line of the Simms block in Survey 291. It has cored an oil sand at the same horizon as the wells in the field, a little less than 1,300 feet. Officers of the Simms Oil Co., including Mr. Streeter of New York, chairman of the board of directors, and E. T. Moore of Dallas, president of the company; Mr. Todd, general superintendent of production, and H. C. Cate of Dallas, head of the land department, are expected in Laredo in a few days to see the Leyendecker and Dinn wells brought in.

Randado Pool

Wheelock & Collins in Block 21 of Survey 291, in the Randado Field, at 1,269 feet got a gas well in their No. 2 Palacious. It was delayed being brought in by the bailer being stuck in the hole. It has moved the gas line across the northwest part of the field a little to the east and has changed calculations on the field somewhat and makes the Simms acreage off to the north look some better. With this shifting of the theoretical ends of the gas line as based on the location of the actual gas wells the Weil well of the Simms is accounted for as a probable oil well. Simms has completed all its wells in the northwest quarter of Survey 291 up to and including No. 6 and is drilling on No. 7. Nos. 9 and 10 of the Houston Gulf Gas Co. in Blocks 11 and 20 of Survey 291 are ready to bring in. William F. Morgan's No. 2 on Block 11, No. 3 on Block 14, No. 4 on Block 14 and No. 5 on Block 20 are in or ready to bail and all are wells due to be oil wells. American Well & Prospect Co.'s No. 4 Palacious on Block 15 of Survey 291 is on the sand and ready to set casing. No. 5 is drilling. No. 6 has the derrick up and Hoad and others on Block 247 off to the east have a derrick up and ready to drill.

Henne, Winch & Fariss Field

O. W. Killam's No. 2 Mann-Hinnant has the derrick up on Block 4 of Survey 256. Kitselman & St. Albans' No. 4 T. P. Holbein has a derrick up on Block 15 of Section 12. No. 3 Weber-Holbein is drilling at 2,010 feet. No. 36 on Block 14 of Section 11 has set casing at 2,135 feet. No. 38 on Block 8, Section 16, has the derrick up. No. 39 on Block 40 of Section 11, is moving in tools. No. 40 has the location made in Block 30 of Section 12, and location for No. 41 is in Block 41 of Section 11. Associated Oil Co. completed a 50,000,000-foot gas well in its No. 2 Lopez on Block 21 of share No. 1 of the Las Animas tract. M. E. Weber's No. 2 Holbien is on the sand at 2,132 feet in Section 15.

Jim Hogg Wildcats

Murchison & Fain are drilling at 2,310 feet in No. 1 Yeager in the northwest corner of the county on Survey 452. National Oil Co. is waiting for water on Block 23 of the Wilbur Allen ranch. Benedum & Trees are drilling at 3,490 feet in No. 1 Allen, on the Allen ranch; set casing at 2,300 feet in No. 2 Allen, and drilling at 2,251 feet in No. 3 Allen, all wildcat tests on the Wilbur Allen ranch. Oil Exchange Co. of Laredo is preparing to drill on Survey 230 south of the Randado Field. Simms Oil Co. is rigging up on Block 2 of Section 28 of the Wilbur Allen ranch. L. M. Holden is drilling at 1,000 feet in his No. 2 Jones a few miles east of Hebbronville, using rotary rig.

Cole Field

Cole Petroleum Co.'s No. 26 Benavides on Block 9, Section 10, a 300-foot offset to the Cin-Tex Petroleum Co.'s No. 7 has topped the sand seemingly 40 feet higher than in the Cin-Tex wells. The sand is saturated with oil and it looks like a well. The well is northwest of the Cin-Tex discovery well and seemingly has thrown a new problem into the field since operators were expecting to see the big oil production all to the east of the discovery well. The gas field lying to the west with several big wells completed and producing was developed before Cin-Tex drilled its discovery oil well. Another feature of the field this week is the discovery of a sand at 2,716 feet by the Houston Oil Co. in its No. 3 on Block 16 of Section 10 which it deepened when it failed to produce at around 1,780 feet where the Cin-Tex discovery well and other oil wells of the field got production. Houston Oil Co. is waiting for 4½-inch casing to set and make a test, and Cole will set regular sized casing in its No. 26.

There are now five producers in the field and a sixth standing nearly full of oil. Cin-Tex's No. 1, the discovery well, is in the northwest half of Block 16 of Section 10, the full blocks containing 40 acres, is 150 feet from the southwest and southeast lines. No. 2 is 550 feet northeast of No. 1 and is 150 feet from the southeast line of the 20-acre tract. No. 3 is located 150 feet from the southeast and northeast lines of the 20-acre tract. has been plugged, and No. 4, located 150 feet from the northwest and northeast lines, has not been drilled. No. 5, located 300 feet southwest of No. 4, and 150 feet from the northwest line, has been plugged. No. 6 is 300 feet southwest of No. 6 and 150 feet from the northwest line. It is 550 feet due north of the discovery well and is the best producer in the field. No. 7 is 300 feet southwest of it and was completed a week ago and is nearly as good as No. 6. The four producers are on the southwest end of the 20 acres and occupy little more than 10 acres. Houston's No. 1 is 300 feet southeast of the Cin-Tex discovery well and is flowing. Houston's No. 5 is 650 feet southeast of its No. 1 and is waiting to go on the pump with the hole standing with considerable oil in it. Houston's No. 3 which is being deepened and may have a new sand at 2,716 feet, is 1,000 feet northeast of its No. 1.

Barkley-Meadows and William F. Morgan completed their No. 3 on Block 4 of Section 10, a mile north of the Cin-Tex discovery well. It is a 35,000,000-foot gas well. Their next location will be a half mile to the east on Survey 323 and a mile northeast of the Cin-Tex discovery well. George M. Ball is drilling at 1,600 feet in his No. 1 Roach on Survey No. 463, 2½ miles east of the Cole Field. Cole's No. 25 on Block 1 of Section 18, a mile southeast of the field, is drilling below 1,500 feet.

Webb County

Outside of some drilling in the Carolina-Texas gas area, drilling this week, as it has been for some time, is confined largely to the Bruni and Edgington tracts south of the Aviators Field. George M.

TWELVE COMPLETIONS IN MEXICO; PRODUCTION DROPS TO 2,250 BBLS.

By George Blardone
Mexican Bureau, The Oil and Gas Journal

TAMPICO, Mex., June 17.—After the avalanche of wells finished as May rounded into June, Mexican fields were comparatively quiet last week. The completions for the week totaled 12 wells, of which number 8 were failures and 4 can be placed in the production column. The new production for the week drops back to 2,250 bbls., of which 1,000 bbls. can be credited to the south fields, and the remainder to the northern fields.

The pay completions follow: In the south fields, Mexican Eagle Oil Co.'s No. 50, Lot 132 Amatlan, is rated for say 1,000 bbls. at a sub-sea level of 1,583 feet. In the northern fields, Mexican Sinclair Petroleum Corp., carries off the honors of the week, No. 26 Tananturo, in the Panuco Field, being good for 400 bbls. at 1,983 feet; and No. 15, Lot 2 Camolote, finishing for 800 bbls. at 2,095 feet. Down in the Herradura sector of the Panuco, National Oil Co., possibly has 50 bbls. in No. 4, at 2,305 feet.

The failures in the northern field follow: La Corona Petroleum Co. drilled into salt water in No. 180, Lot 4 Cacalilao at 2,207 feet. Transcontinental Petroleum Co. had salt water in No. 275, same lot and sector, at 1,940 feet; and No. 61 Paciencia also finished in salt water at 1,915 feet. Tampascos Oil Co.'s No. 17-A Robles, in the Panuco Field, is a dry hole at 1,950 feet. Up in Ebano, Mexican Petroleum Co. is plugging back No. 17 Mendez drilled to 2,044 feet, in the hopes of getting some small production from an upper stratum.

In the south fields, Huasteca Petroleum Co.'s No. 74 Cerro Azul finished in salt water at 1,960 feet; No. 66-A Tierra Blanca is a dry hole at 2,580 feet. Mexican Eagle Oil Co.'s No. 18 San Geronimo is a duster at 3,000 feet.

May Completions

With the single exception of the month of April when 86 wells were completed, May holds the record for completions in any one month in the history of Mexican petroleum. Some 85 wells were completed during the month, of which 31 were producers and the remainder failures. Three exceptionally big wells in the south fields ran the potential head production up for the month, the total being 155,605 bbls., of which 105,400 bbls. can be credited to the major wells in question down south. The northern fields can be credited with the remainder, or say, 50,000 bbls., practically all of which, with minor exceptions, belong to the Ebano sector. Of course, potential head production does not mean production that will be withdrawn in actual exploitation by a good deal. The percentage of failures ranked high, but this was to be expected, especially in the northern fields, where most of the drilled locations were in sectors that are already honeycombed with wells producing or failures.

At Panuco

Drilling operations in the Panuco Field, as the week ended, are best reflected as follows: La Corona Petroleum Co.'s No. 116 Potrero de Ojital, and No. 117 same, are each in gray lime at 1,615 and 1,400 feet respectively; No. 121 Piedras is rigging; No. 118 Salvasuchi is rigged, waiting for permit, and No. 119 Delicias is a derrick. Cia Petroleum Capuchinas, No. 11, Lot 12, West Maguabes, cemented 8-inch in lime at 1,230

(Continued on Page 79)

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Ball's No. 2 on Block 13, located 150 feet each way from the northeast corner of the east half of Block 13, was completed the past week and came in swabbing 600 bbls. Gibson Oil Corp., with three wells completed in the northwest corner of the west half of Block 13, drilled in No. 4, making a good well, and set casing on No. 5, and is drilling Nos. 6 and 7. J. E. Walsh of the Gibson Oil Corp. believes the total recovery in that part of the field will be 11,000 bbls. per acre. The 60-acre lease is all to be drilled at once. Murchison & Fain completed No. 1 Bruni, in the southwest corner of the south half of the east half of Block 13, the first completion since they bought a half interest in the lease from George M. Ball. It came in swabbing 400 bbls. a day. Kirkpatrick-Lucas are shut down at 200 feet in the Edgington tracts delayed by lack of water. O. W. Killam, drilling on Block 7 of Survey 835, on the west edge of the field, is down 2,750 feet in a feed test which mudded off 35,000,000 feet of gas at 1,634-38 feet.

Crown Central Operations

Crown Central has rigged up on its deep test on the Garcia land in Lot 56 of Survey 606, which is to be a deep test a little north of the Aviators Pool. Crown Central has a derrick up for No. 2 "B" Bruni, on Block 16, is drilling at 1,300 feet in No. 10 Bruni on Block 17, is drilling at 200 feet in No. 11 Bruni on the west half of Block 43, rigging up on No. 12 Bruni in Block 43, and has the derrick up for No. 13 Bruni in Block 17. Crown Central-Staley & Wynne are drilling at 1,200 feet in No. 6 "A" Bruni, are on the sand at 1,712 feet in No. 2 "B" on Block 14. Houston Gulf Gas Co.'s No. 1 on Block 12 of the Bruni tracts is drilling at 1,400 feet, having been delayed for repairs. George Echols has abandoned his test on Block 68, more than 2 miles east of the field, having passed the horizon of production. Stroube & Stroube have three derricks up two on the Edgington subdivision and one on the Bruni tracts, but have not made any movement yet to drill.

Staley & Wynne completed their No. 4 Bruni making 75 bbls. on the pump, No. 5 swabbing 300 bbls., both on the west half of Block 18 in the Bruni tracts, and completed No. 1 in the southwest corner of the south 20 acres of the west half of Block 13, swabbing 400 bbls. and offsetting the wells on Block 18. Depths are 1,728 to 1,736 feet. Derricks are up for four other wells on their lease, which are ready to spud in. Jess C. Robinson is rigging up in the Bruni tracts. Sun Oil Co. has spudded in its No. 3 Bruni on the east half of Block 45. Ruthada is drilling on its second well on the east half of Block 18. Location of No. 1 was first given as in the northwest corner of the east half of Block 18. It is in the southwest corner and has been completed. No. 2 is in the northwest corner and is drilling.

Columbia Petroleum Co. (formerly Three Rivers Oil Co.) is drilling No. 7 Bruni in the southwest corner of Block 77 of the Edgington tracts. Edgington-Niles are drilling at 500 feet in No. 1 Puig in the southwest corner of Block 65 of the Edgington tracts. Trussell & Cezeau have a derrick up in the northeast corner of Block 39 of the Bruni tracts, 2½ miles due east of the Wheatley well, in the northwest corner of the east half of Block 43, which when it was completed, extended the field a mile south and east. George Echols, in the northwest corner of Block 68, just a mile south of the Trussell & Cezeau well, got a dry hole and has abandoned the test at around 2,000 feet.

In Webb County, outside of the territory south of the Aviators Pool, Laredo Oil Co. has topped a sand at 1,645 feet in No. 11 Killam, on Survey 457, close to the town of Mirando City and is preparing to test. Layne and others, in Survey 309, south of Bruni tract, are in hard rock at 1,970 feet. Gleason and others have abandoned at 2,010 feet, the test on Block 12 of Survey 9, south of the Bruni tracts. O. W. Killam is starting a test on Survey 309 for Ramsland and others, south of the Bruni tracts, and a little northeast of the old Mirando Valley Field.

Carolina-Texas Field

J. H. Winch, who completed a small gas well on Survey 336, in the Carolina-Texas Gas Field last week, is rigging up on No. 2, in Block 12 of Survey 336. Houston Gulf Gas Co. has set casing at 1,991 feet on Block 9 of Survey 268. Associated Oil Co. is drilling at 2,100 feet in No. 2 "A" Webster in Survey 684, and has the location made for No. 3 Webster in Survey 684, located 450 feet from the west line and 1,110 feet from the north line. Daniels & Best have spudded in No. 1 Webster in Survey 684, located 1,470 feet from the west line and 150 feet from the north line.

Webb County Wildcats

National Refining Co. has the derrick up and is moving in a rig to drill on the northeast corner of Survey 700, 1½ miles southwest of where National drilled a wildcat last year and 1½ miles northwest of Cole Petroleum Co.'s No. 9 "A", in the center of Survey 753. Cole's No. 9 "A" is rigging up. Cole's No. 10 "A" on Block 5 of Section 3, 2 miles due east of its No. 9 "A", is drilling at 2,500 feet in lime and gumbo. Cole's No. 23 in Block 9 of Survey 8, 150 feet from the southwest and northwest lines, is a dry hole at 2,200 feet. It is about a half mile east of the first three wells drilled by the Cole Petroleum Co. a few years ago. Burns & Malone, after coring at 1,680 feet in No. 1 Voe on Survey 51, a few miles southwest of the Carolina-Texas Gas Field, are drilling deeper. Lane-Texas Co., in the townsite of Laredo is drilling at 1,968 feet. W. C. Ritchison cored at 2,132 feet in No. 1 Billings, in Survey 71, several miles northeast of the Carolina-Texas Field.

Piedras Pintas Field

Humble Oil & Refining Co., after carrying its No. 5 Walsh on the Piedras Pintas Salt Dome at Noleda in Duval County down to 4,105 feet, 482 feet below production in the discovery well, came back and put in a whipstock and has drilled through the casing and expects in a short time to be down to 3,300 feet where the first good showing in the well was had and will make a test there. No. 6, located 400 feet to the west of the discovery well, is drilling at 2,224 feet. No. 9 Singer is rigging up the location being 500 feet south of No. 8. Magnolia's No. 1 Speer is at 3,660 feet and shut down for boiler repairs. Humble's No. 5 Schallert, on the north flank of the Palangana Salt Dome, is rigging up. Simms Oil Co.'s No. 1 Schallert is drilling at 3,552 feet. Maurer & Duggan are drilling at 3,461 feet on Survey 123, a little northwest of the Palangana Salt Dome. Humble's Dowdy (fee) test in the north part of Duval County is drilling at 1,718 feet, and T. J. Graham has set casing in No. 1 Beall, in the northeast corner of the county at 2,462 feet and was preparing to test the last of last week. Murchison & Fain are drilling at 600 feet in No. 1 Peters, 10 miles north of the Cole Field. Benedum & Trees are drilling at 1,812 feet in No. 1 Southerland, north of the Cole Field. Morgan Oil Corp. is drilling below 700 feet in No. 1 Benavides, on the Mesquite ranch, on Block 29 of Survey 1 of the Mesquite ranch.

Atascosa County

Plateau Oil Co.'s test, 2 miles west of Anchorage, in the northwest corner of Atascosa County, started drilling last week. It is to be a wildcat test to the Edwards lime. Witherspoon Oil Co.'s test on the Turpe tract, in the southwest limits of Somerset Field, and 3 miles north of the Plateau wildcat also spudded in the first of last week.

Bastrop County

Amerada Corp. is moving in tools for the test near Cedar Creek.

Bee County

Benedum & Trees' No. 1 Goree, in Bee County near Mineral, is drilling below 3,200 feet. W. E. Clark's No. 2 Scott, north of Beeville, is drilling below 2,400 feet.

Bexar County

I. L. Dingman is drilling at 1,800 feet in No. 1 Gembler, south of San Antonio in Bexar County. George E. Ginter has completed No. 8 Cotton Mill at 630 feet and it is estimated to pump about 4 or 5 bbls. Ninety wells in the Southton Field, where this well is located, are producing approximately 300 bbls. daily. For the month of May this field, with less than 90 wells made a total of 6,947 bbls. pipeline run. No. 1 Southton Park, in the same field, owned by M. Cicero, is drilling at 300 feet. Utah Texas Oil Co.'s No. 1 Ivan Vick, an Edwards lime test, south of Douthton a few miles, is drilling below 2,877 feet and is 77 feet in the Edwards with no show of oil in the last cores. Marland Oil Co.'s No. 1 Mihalski, in eastern Bexar County, which failed to get production in the Edwards lime is drilling at approximately 2,000 feet and is supposedly in the bottom of the Edwards lime. It will test the Georgetown and Trinity formations. W. L. McClanahan's No. 2 Sodrok pulled the liner at 1,405 feet and is drilling deeper. It is located south of Adkins. Tidal Oil Co.'s No. 1 Cantu, south of Adkins 1 mile in eastern Bexar County, has abandoned the test at 1,751 feet. It was a shallow test to test the Taylor Marl above the chalk. Humble Oil & Refining Co.'s No. 1 Yturri is drilling in the chalk below 1,350 feet. Storey & Stieren's No. 1 Cover, in eastern Bexar County, resumed drilling the first of the week at 1,406 feet after shutting down to drill a water well. C. J. LeComte is drilling the Rosalino Diez, a wildcat on the J. M. Noriegas survey.

Brooks County

Benedum & Trees are shut down at 3,500 feet in No. 1 Wormser in the northwest corner of Brooks County, and Ballard & Underwood are drilling at 610 feet in No. 1 Lasater in the northeast corner of Brooks County.

Brewster County

Green Valley Oil Co.'s No. 2 Wilson, in west central Brewster County, which shut down at 2,115 feet waiting for orders, has resumed and will go to 2,500 feet, and failing of production will plug back and shoot the well at 1,740 feet, at which point No. 1 Wilson made a lot of oil before the casing collapsed and the well was lost.

Guadalupe County

Pat Armstrong's No. 1 Dale, northwest of Kingsburg, is shut down at 1,480 feet due to water shortage. J. M. Davis' No. 1 Schultze, in western Guadalupe County, is drilling at 1,965 feet and is 100 feet into the Edwards without any showing of oil, gas or water. It is drilling deeper. Payne & Bond topped the Edwards at 2,040 feet in No. 1 Rosenbrock, 2 miles south of the Davis well and has abandoned the test at 2,125 feet. They had a shallow sand at 1,205-1,310 feet, which they will test in a second well. The Texas Company's No. 1 McGonigal, south of Kingsbury, is in chalk at 2,315 feet and the log seems to be running lower than in No. 1 Glenwinkle, recently completed by The Texas Company, near this.

Jim Wells County

Benedum & Trees' No. 1 Gallagher, in Jim Wells County south of Sandia, is drilling at 3,210 feet.

Karnes County

Earl B. Reynolds' No. 2 Butler, in Karnes County, spudded in the past week, located about 1,000 feet south of the first

(Continued on Page 90)

NEW TESTS IN MOAB DISTRICT, UTAH, STARTED BY THE TEXAS COMPANY

By Frank B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., June 19.—The Texas Company has started work on its leases in the Moab district of Utah. The company secured leases on the bed of the Colorado River at the Cane Creek structure and is now building cribs to place derricks on, to drill wells.

A new phase on the ownership of lands in the river bed of the Colorado has arisen through The Texas Company's leases. It appears that the United States Government claims title to all river beds and the State of Utah also claims the land there through the ceding of Government lands to the State. In order to settle the matter definitely, The Texas Company has started a suit and as the leases are held by other oil companies for the same land, the litigation promises to be heavily involved and to last indefinitely.

The discovery well of the Midwest Refining Co. and the Utah Southern Oil Co. is drilling below the oil sand at 2,410 feet and expects to find another sand in the next 50 feet. The second test of the two companies, located on the Shaffer Dome about 5 miles southwest of the discovery well, is at 1,200 feet and making hole.

The Midwest Refining Co. and the Utah Southern Oil Co. have started building a rig about a half mile north of the discovery well, on the river bank, for a second test of the Cane Creek structure and the two companies have also moved in equipment for a rig and well on the Lockhart structure, about 10 miles south of the discovery well. This last location is on Section 16-28-20.

The Midwest Refining Co. is building a road to the Elk Ridge structure location and this work is expected to take considerable time to complete as the country is very rough. The Elk Ridge is a much large structure than any of the other anticlines in eastern Utah and the Midwest Refining Co. will drill a deep well to test all horizons.

The Marland Oil Co. has a well on the Green River structure at 2,650 feet and is drilling. The Cresent Eagle has a deep hole about 4,000 feet down and 10 other wells are drilling at shallow depth on various structures over the district.

At the regular meeting of the Consolidated Royalty Oil Co. held in Casper the board of directors declared the regular quarterly dividend of 2½ per cent payable quarterly on July 25 to stockholders of record of July 15. This makes the thirty-fifth consecutive dividend paid by this company.

To Drill in Oregon Basin

The Ohio Oil Co. is preparing to drill another well in the Oregon Basin in Park County, Wyoming. Last year, this firm secured a franchise to supply gas to Cody, but the well the Ohio Co. put down began to show water and the company decided it would be best to develop farther before starting to lay a pipeline. It is now considered that if the second well proves productive of gas, the Ohio Co. will have sufficient gas to warrant laying the line.

Enlarging Shelby Tank Farm

The Illinois Pipe Line Co. has increased its orders for steel tankage for the new tank farm at Shelby, Mont., to 22 tanks of 80,000-bbl. capacity. When this tankage is placed, which is expected to be about next winter, the field will have plenty of room for all production now in sight.

Salt Creek Completions

The Midwest Refining Co. completed nine new producers in the Salt Creek Field the past week, through the subsidiary companies. The Wyoming Oil Fields, (Salt Creek Producers), completed a Lakota sand well on Section 26-40-79, at 2,393 feet to the top of the sand and shut down without drilling in. Another well of the same company was completed to the first Wall Creek sand

(Continued on Page 131)

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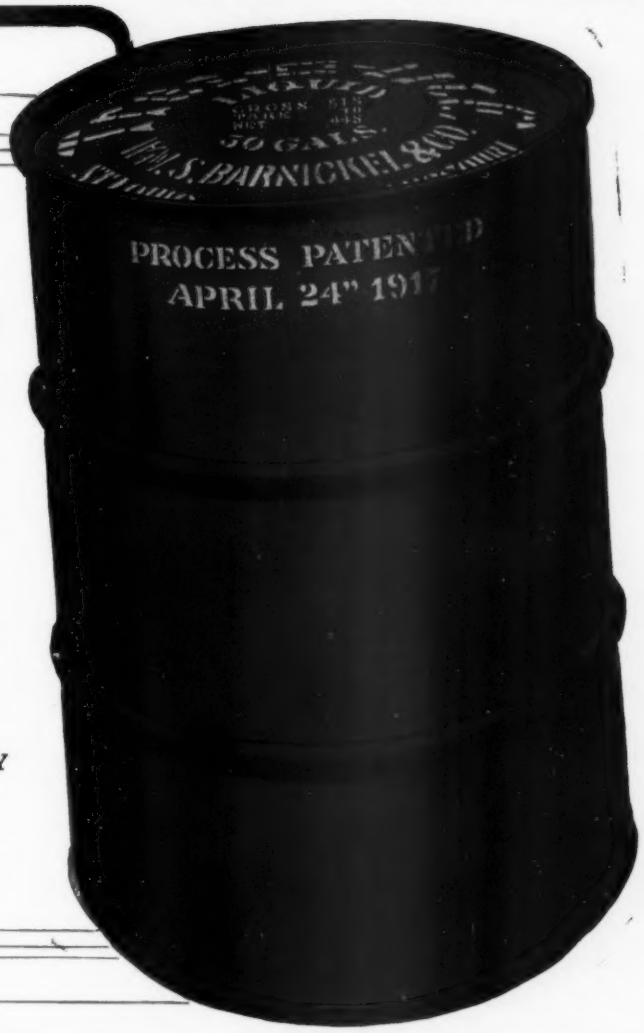

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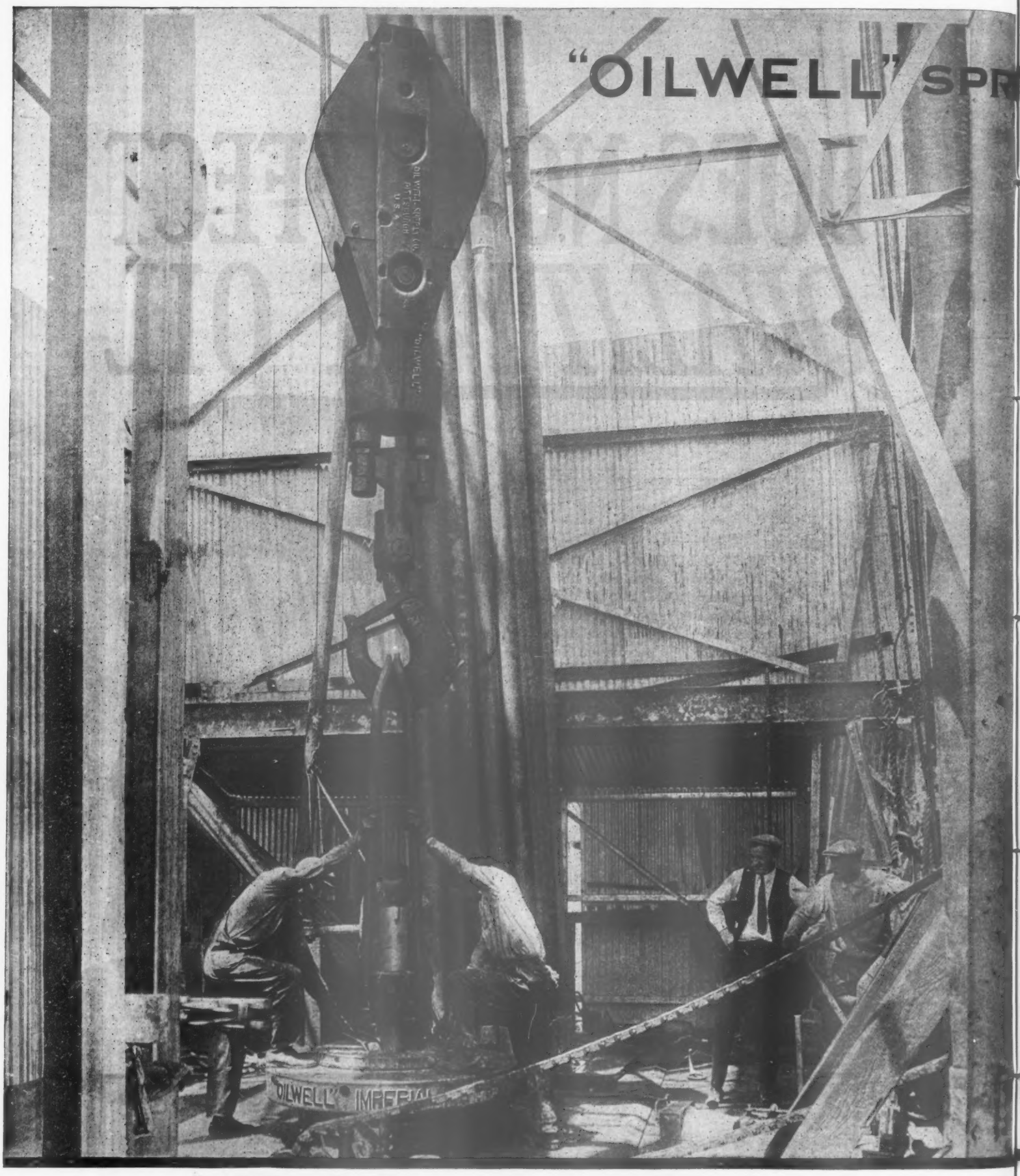

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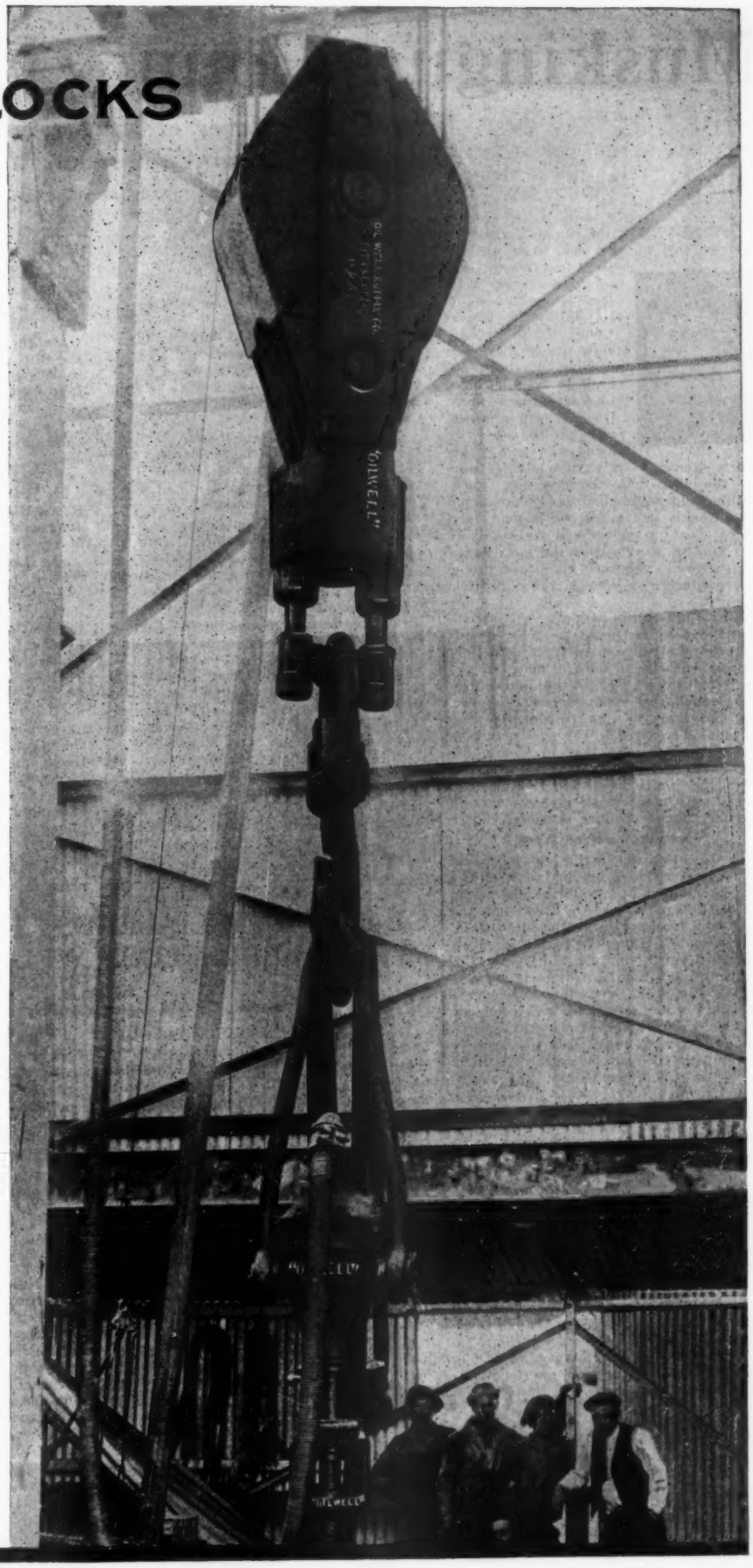
The photograph to the right shows the block with springs under compression carrying the load, while the photograph to the left shows the block relieved of the load.



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Muskingum County Has 78 Barrel Well

Fifty-Bbl. Producer in Ritchie County, West Virginia, Only Other Good Completion in the Eastern Fields

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., June 21.—Development work in the past week was almost featureless. Better than average wells were scarce and of little interest. Uncertainty as to an advance in the market is causing operators to hesitate when it comes to starting new work. Only a very few sections in the entire fields show any activity. Fewer wells were completed during the past than the preceding week. Drilling old wells to a lower producing formation is still a feature in many districts. Light pumpers are the result of this kind of work. It is the last chance for the wells that are no longer profitable producers in some of the upper formations.

Now and again a wildcat well is completed but so far none has proved sufficiently productive to attract attention. In fact, nearly all find a place in the list of dusters. Up to the present no new pools have been discovered this year. The only one of any considerable importance discovered in the past decade is the Big Injun Sand Pool in Henry district, Clay County, West Virginia. The producing limits have not been defined and it has more work under way and starting than any other development.

Best Producer of Week

To call attention to the best producers of the week requires but little space. The only completion that could be classed as better than the average is located in the deep sand territory in southeastern Ohio. In Section 6, Hopewell Township, Muskingum County, the A. H. Heisey Co. completed and shot a Clinton sand test on the James S. Drum farm. The first 24 hours after shot, the well produced 78 bbls. When Holmes, Hocking, Licking or Perry Counties fail to complete one or more good producers there is little chance in any other part of the southeastern Ohio fields.

Ritchie County Has Fair Well

In Grant district, Richie County, West Virginia, L. N. Rinehart & Co. have completed in the Big Injun sand a second test on the Rosetta Mitchell farm and estimated to be good for 50 bbls. a day. In Church district, Wetzel County, the Pure Oil Co. has drilled down to the Gorden sand No. 12 on the Santee heirs' farm and it is a gasser.

In Freemans Creek district, Lewis County, the Pittsburgh & West Virginia Gas Co.'s well on the E. M. Waugh farm is a gasser in the same formation. In Troy district, Gilmer County, the Ohio Fuel Oil Co.'s second test on the J. E. Smith farm, is a duster in the Big Injun sand.

Lincoln County Gassers

All late completions in Lincoln County are gassers in the Berea grit. In the list are, the Columbia Gas & Electric Co.'s test on the J. C. Bragg farm, and in Duval district, the same company's test on the U. P. McMullen farm. In Carroll district, C. C. Wolfe has one on the Nida-Pridmore farm. L. H. Sweetland's test on his own farm is a gasser. In Union district, the Union Oil & Gas Co. has one on the Julia and William Cooper farm.

Two and one-half miles southeast of Hebron, Clay district, Ritchie County, the Philadelphia Oil Co. has completed in the Big Injun sand a test on the J. B. Markle farm. It is a light gasser in the formation named. In the same district, 1,000 feet northwest of the test on the W. E. and D. W. Bradford farm, the Rico Oil & Gas Co. is drilling another test on the same farm.

On Tanners Creek, Troy district, Gilmer County, the Ohio Fuel Oil Co. has completed in the Big Injun sand a second test on the W. H. Bush farm. It is a natural producer good for 10 bbls. a day. On Dry Ridge, Grant district, Ritchie County, Lafayette Wiles & Co. have completed and shot No. 22, on the West Virginia tract, showing for a very light pumper.

On Dents Run, Grant district, Monongalia County, the Carnegie Natural Gas Co. has drilled its test on the William B. Hess farm to a total depth of 4,700 feet and dry in all sands.

Clay County

Located inside of defined limits in Henry district, Clay County, the Virginia Gasoline & Oil Co. has completed No. 10, on the Swan, Goshorn, Brown & Geary tract, good for 15 bbls. a day. In Union district, same county, the Empire Petroleum Co. has completed in the same formation a second test on the J. M. Young farm, a gasser good for 250,000 feet a day. The location is 600 feet southwest of the test on the Charles Osborne farm. Development work in this district is increasing rather than diminishing.

In Center district, Calhoun County, the Hope Natural Gas Co.'s test on the Guy Gainer farm is a gasser in the Big Injun sand. In the same district, the same company is due in the sand at a test on the Mary Blake and Frederick Stump farms. In Center district, the White Pine Oil & Gas Co. is due in the sand at a test on the T. W. Simmers farm. In Carroll district, Lincoln County, the Cambridge Gas Co. is due in the Berea grit at a test on the Samuel Harris farm.

Wildcat Dry in All Sands

On the middle fork of Trout Run of the Buchannon River in Randolph County, West Virginia, located on the J. J. Ritter farm, Slaughenhopt and others have drilled a wildcat through the Speechley sand to a total depth of 3,000 feet and found nothing. It has been abandoned. The formations drilled through contained no oil or gas.

In Grant district, Ritchie County, Rawe Brothers completed No. 4 on the John Adams farm, good for 2 bbls. a day in the Big Injun sand. In Murphy district, Hays & Roberts have a gasser in the Big Injun sand at No. 3 on the Levi Wilson farm.

In Union district, Pleasants County, the Big Bend Oil Co.'s test on the Susan Flesher farm, is dry and abandoned. In Union district, Tyler County, Dr. George T. Gale has completed No. 9 on the Sarah D. Thistle farm, good for 4 bbls. a day in the Big Injun sand. In Union district, Lincoln County, the United Fuel Gas Co. has a gasser good for 500,000 feet in the Berea grit on the J. W. Dingis farm.

On Shawnee Run, Lafayette district, Pleasants County Albert Neely has completed in the Big Injun sand a test on the W. T. Cumberlidge farm, a light gasser. In Central district, Calhoun County, Godfrey L. Cabot has completed and shot in the Big Injun sand a test on the L. C. Hamilton farm, a fair gasser.

Drilling and Starting Tests

In Mannington district, Marion County, the Carnegie Natural Gas Co. is putting in the 10-inch casing at a test on the S. C. Thorn farm. In Union district, Pleasants County, L. C. White is fishing for a string of tools on the E. L. Newlan farm. In Union district, Wood County, the Four S. Oil Co. is rigging up on the Ora Bartetnus farm.

New Work in Ritchie County

In Grant district, Ritchie County, L. N. Rinehart & Co. have started to drill a second test on the Daniel Mitchell farm. In the same district, the American Oil Development Co. is building a rig on the Abraham Middleton farm. In Murphy district, the Hardwick Farm Oil Co. is building a rig on the C. Hardrick farm. In the same district, J. F. Deem & Co. have made a location on the W. H. Pierpoint farm.

On Poplar Fork, Scott district, Putnam County, the Producers Co. has the rig completed and started to drill a test on the G. W. Joyce farm. On the same stream and same district, the same company has started to drill a second test on the H. H. Pine farm. On the waters of Mud River, Grant district, Cabell County, in the town of Milton, the Harshbarger Oil & Gas Co. is drilling a test on the E. E. and C. L. Harshbarger farm.

At California House, on Hughes River, Grant district, Ritchie County, the Astron Oil Co. is rigging up on the Stursburg Realty Co.'s property. In Clay district, Wirt County, Roberts Brothers have moved a drilling machine to a location on the John F. Dravo farm.

Wood County

In Walker district, Wood County, the Four S. Oil Co. has started to drill a test on the Ora Bartimus farm. In the same district, the Congdon & Woodhard Oil Co. is drilling on the Elzie Grant farm. The South Penn Oil Co. is drilling No. 19 on the Susan Grant farm.

In Sherman district, Calhoun County, W. H. Bicel is rigging up at a test on the James Wolverton farm. In DeKalb district, Gilmer County, Snider & Deem have a rig up on the J. A. Cain farm. In New Milton district, Doddridge County, the Carnegie Natural Gas Co. has started to drill on the George Shouse farm.

Marshall County

In Union district, Marshall County, the Spider Oil & Gas Co. is rigging up on the Anna Jochum farm. In Washington district, E. T. Wood & Co. are drilling on the Edward Newman farm. In Church district, Wetzel County, the Pure Oil Co. has drilled old No. 12, on the Santee heirs' farm to a total depth of 2,675 feet and shut down for orders. Up to the time drilling was suspended only a little gas had been developed. In Proctor district, the Proctor Oil & Gas Co. is drilling on the Jackson O'Neil farm.

In Scott district, Boone County, Downing & Co. are drilling a test on the Ruben Hill farm. In Washington district, the South Penn Oil Co. is drilling on the J. A. Weatherall farm. In Jefferson district, Lincoln County, the Cambridge Gas Co. is due in the sand on the Horse Creek Land & Mining Co.'s tract. In Carroll district, the Grant Gas Co. has started to drill on the Scott Lawson farm.

Kanawha County

In Big Sandy district, Kanawha County, the United Fuel Gas Co. is due in the Big Injun sand on the Robertson-Taylor farm. In the same district, the same company has a rig up on the Re-

(Continued on Page 104)

GLASGOW FIELD LEADS KENTUCKY; 60-BBL. FLUSH WELL, LECTA POOL

By Whit
Staff Correspondent, Kentucky-Tennessee

GLASGOW, Ky., June 21.—The Glasgow Field of Barren County once more takes the lead in completed wells and the only real feature wells of the past several days in any section of Kentucky, though none of them were on the wildcat order, but located in what is considered defined limits, if there is such a thing in Kentucky. The new well is No. 6, on the C. B. Jones farm, in the Lecta Pool, about 3 miles east and south of Glasgow, and had a flush of better than 50 bbls. from a sand at 493 feet.

The Lecta Pool came to light in March by the completion of the discovery well of the pool on the C. B. Jones farm, with a flush of better than 100 bbls., which caused quite a commotion, as the well was located where the territory was looked upon as outside the prospective producing areas. Much leasing was done and a number of wells have been completed, some dry, others light, along with some excellent wells. A second test on the Jones farm, was started and completed in March with a flush of 50 bbls., which was the second venture. In April, No. 3 was completed for 25 bbls., and during the same month No. 4 came in a rank duster, but the owners kept plugging along and in June drilled in No. 5, which proved a dry hole, No. 6 was started and when in came in a few days ago was rated by competent oil men at better than 50 bbls. In the meantime two dry holes were found nearby on the Clark and McCoy farms, but a few days ago, No. 1 Grady farm, adjoining, came in for 20 bbls., and these wells are bound to bring new development work in advance, for they find that territory little thought of by some sometimes proves the best. The Knob Road, in the same county, is credited with a 20-bbl. producer in No. 5 Richardson farm. Outside of these three wells, only one find of 10 bbls. or better was made on the J. J. Gambill farm, in the North Weir Field of Lawrence-Johnson Counties. The rich territory in Cumberland-Monroe-Adair Counties failed to report any new completions and the Owensboro district failed to show any producers of note as was the case in other sections of the Blue Grass State, hence the small flush production of all counties for the week combined, which was not larger than an occasional well shows, in other weeks.

Week's Work

A summary of the week's work in the Kentucky Field shows 22 completions, 16 producers with a flush of 160 bbls., and 6 dry holes. Compared with the previous week, this is a decrease of 6 completions, 5 producing wells, 90 bbls. less production, and 1 less dry hole. These wells were distributed by counties and districts as follows:

	Comp.	Oil	Prod.	Dry
Barren	7	6	102	1
Lawrence-Johnson	5	5	36	0
Owensboro	4	2	10	2
Warren	4	2	4	2
Lee-Owsley	1	1	8	0
Allen	1	0	0	1
Total	22	16	160	6
Previous week	28	21	250	7
Difference	6	5	90	1

Kentucky Oil Runs

During the month of May, or for four weeks of the month, there were 369,712.92 bbls. of crude oil run through the major pipelines, making their reports in Kentucky. The eastern division led with a total run of 248,454.88 bbls. This crude was purchased by the Cumberland Pipe Line Corp., and runs as follows: Week ending May 8, 61,418.63 bbls.; week end-

(Continued on Page 102)

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THE Whitworth Thread has proved the ideal thread for sucker rods. This thread does not come to a sharp point but is slightly rounded and has a fillet at the base. Thus it both utilizes the strength principle of the Arch Curve and permits the largest quantity of metal to remain in the pin. WHITWORTH THREAD pins eliminate pin fractures. Exhaustive tests have proved D&B Sucker Rod pins *15% stronger than the rods themselves.*

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CONTINENTAL

Good Wells in Illinois and Indiana

Seventh in Allendale Field, Wabash County, Reported 120 Bbls. Flush. Clark County Has 60-Bbl. Flush Producer

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 18.—Completions were few in any portion of the Central West Field for several days past, although weather conditions were ideal and the first real weather during the season.

The feature well of the week was the seventh completion on the Mack Madden farm, in the Allendale Field of Wabash County, Illinois, with a flush of 120 bbls. Another very fair producer in the Illinois Field was No. 4 on the Harriett Slater, in the Niagara Limestone, in Martinsville Township, Clark County, with a flush of 60 bbls.

Indiana is credited with a well far above the average in the first venture on the Walter Miley farm, Section 14, Logan Township, Pike County, in the Princeton-Oakland City district. The well showed a flush of 70 bbls.

The best completion for the Lima Field for the past few days was a 15-bbl. flush well northeast of Lima, on the Driver farm, Bath Township, Allen County.

Central Ohio completions were gas producers, while Michigan, as reported last week, had one new completion to its credit in the Saginaw Field, on the John Palvas farm, Section 14, and between producing wells, and may make a flush of 10 bbls. when put on the pump.

New strings of drilling tools are being shipped into the Saginaw Field and there are propects of quite a boost in development work, there being nine wells completed so far, with no dry holes, a very fair record for a new field and covering a defined area of around a mile.

Lima Field

Fourteen completions are reported from the old Lima Field, or northwestern Ohio, for the week, the largest being only 15 bbls., which is something new as seldom a week passes but some wells show a much better production. There is no let up in work over the Trenton Rock area, but it appears completions are slow, especially within old defined limits on leases where wells were drilled more than 30 years ago and abandoned after years of production.

In the northeast corner of Bath Township, Allen County, O. T. Botkins and others' No. 3 well, 250 feet from the north line and 1,250 feet from the west line of the P. D. Driver farm, Section 12, pumped 15 bbls. Top of Trenton was found at 1,315 feet and drilled 45 feet in the sand. This well is not far removed from the 50-bbl. flush well reported last week in the same section on the William Lenney farm, by Charles Geselchen and others, and the 20-bbl. well drilled by C. A. Peavey and others on the Vore farm, same section. In Spencer Township, same county, the Gwinn Oil & Gas Co.'s No. 6 on the John A. Beerman, mapped as the George Steiger farm, Section 23, pumped 5 bbls., with sand tapped at 1,196 feet and pay struck at 51 feet in the sand. Everbeck & Roder Brothers are reported working at No. 5 well on the Rupert farm, same township.

Just south of Buckland, in Section 10, Moulton Township, Auglaize County, the Kelley Oil Co.'s second well, 75 feet from the south line and 700 feet from the west line of the J. H. Harshbarger farm, in the southwest quarter of the section and in old producing territory, showed a production of but 2 bbls. with top of sand at 1,117 feet and drilled to a total depth of 1,225 feet, or 108 feet in the sand.

East of the Dixie Highway, in Section 29, Perrysburg Township, Wood County, and something like 4 miles south of Perrysburg, the Oko Oil & Gas Co.'s No. 4 well, 650 feet from the north line and 350 feet from the west line of the Louisa Daverna farm, struck top of Trenton at 1,240 feet and went 34 feet in the sand, getting a 12-bbl. flush producer. In Middleton Township, same county, near the Maumee River, Otto A. Brown completed his No. 7 well, 480 feet from the north line and 1,290 feet from the west line of the Frank Rogers farm, Section 28e, which showed a heavy dose of salt water at a total depth of 1,231 feet, or 25 feet in the Trenton. There was very little color of oil and it looks very much like a failure.

Several miles south of Toledo and just south of the town of Latcha, in Lake Township, Wood County, Charles F. Zeising and others' test, 1,200 feet from the east line and 200 feet from the west line of the Andrew Stenson, mapped as the C. Cremmer farm, Section 26, struck top of Trenton at 1,279½ feet and drilled 38 feet in where the well made a 2-bbl. pumper. This well is almost an offset to the big well recently found by Lantz, Schulte and others on the H. C. Michelson farm, which had a flush better than 250 bbls. the first 24 hours. The Michelson well was a crevice well and the Stensen well failed to hit the crevice struck in the big well which is also making a large amount of salt water with the oil.

Stitt and Sawyer's No. 6 well, 300 feet from the north line and 700 feet from the west line of the William Sawyer farm, mapped as the Findlay Pressed Brick Co.'s farm, Section 12, Liberty Township, Hancock County, pumped 2 bbls. Top of sand at 1,257 feet and total depth 1,452 feet, or 195 feet in the Trenton. In Portage Township, same county, the Ohio Oil Co.'s No. 9 well, 1,100 feet from the south line and 600 feet from the east line of the C. L. Turley farm, in the northwest quarter of Section 27, pumped 4 bbls. Sand found at 1,340 feet and drilled 123 feet in the sand.

The Hurry Up Oil Co.'s No. 16, in the northeast corner of the O. D. Dibert, mapped as the John Rinebolt farm, in the northwest quarter of Section 20, Jackson Township, Sandusky County, pumped 2 bbls. Sand was tapped at 1,261 feet and drilled 61 feet in the sand. In Scott Township, Harley, Henderson & Warner's No. 4 well, 600 feet from the south line and 200 feet from the east line of the William O. Doll farm, Section 35, pumped 3 bbls. with sand tapped at 1,260 feet and drilled 82 feet in the sand. The Bee Oil Co. is drilling No. 3 on the Amos Waggoner farm, Section 11, Washington Township, southeast of Lindsay and northeast of Hessville.

Northwest of Celina, in Jefferson Township, Mercer County, Dave A. Miller and others' No. 4 well, 300 feet from the south line and 900 feet from the west line of the Hacker heirs farm, mapped as the Dave Hollworth farm, in the northwest quarter of Section 33, is a 5-bbl. pumper with top of sand at 1,100 feet and at 50 feet in the sand.

Near Elmore, in Harris Township, Ottawa County, Zorn-Hornung Co.'s No. 15 well, 700 feet from the north and west lines of the Ed. W. Yeastings, mapped as the C. Yeastings farm, Section 17, pumped 6 bbls. Sand found at 1,294 feet and drilled 44 feet in the sand.

In the new area south of the old producing lines of the Lima Field, and in Shelby County, Milleck and others drilled a wildcat, 2,100 feet from the south line and 620 feet from the west line of the Henry C. Wolke farm, in the northeast quarter of Section 10, McLean Township, which proved a duster at a depth of 1,277 feet.

In Cynthian Township, Shelby County, Lee A. Watson's second test in the northeast corner of the J. Monnin farm, in the northeast quarter of Section 30, pumped 10 bbls. Sand was found at 1,228 feet and drilled to a total depth of 1,277 feet.

Arrangements are being made for the drilling of a number of new wells in the Payne Field and its northwest extension towards wells in Maumee Township, Allen County, Indiana, and work is expected to start shortly. There is quite a scope of territory between the Payne Pool proper and the northwest developments, that looks almost sure for light production. No new completions are reported from the Roundhead Field, in Hardin County, but at least a couple of wells should be brought in within a week or so. This is one of the best territories at this time for development in the old Trenton Rock area, as the wells, while not large, are holding up above expectations and the Trenton is somewhat deeper than within the old defined limits.

Indiana

A well much above the average producer has been found by Skidmore, trustee, in a test in the northeast corner of the Walter Miley farm, in the northeast quarter of Section 14, Logan Township, Pike County, in the southwestern Indiana territory. This is a slight extension to proven production with a flush production of 70 bbls. Top of sand at 1,387 feet and drilled 40 feet in to a total depth of 1,427 feet. This test is 10 miles east and 6 miles north of Princeton, 2 miles east and 2 miles north of Oatsville, 1 mile southeast of Coats Spring, 1½ miles southwest of Rumble and 7 miles north and 1 mile west of Oakland City. This completion should bring about more active development work in its vicinity.

Another well of interest was the Ohio Oil Co.'s second test along the dividing line of the Parker and Wilson farms, in the northwest quarter of Section 16, Monroe Township, Pike County, 2 miles south and 1 mile west of Claybanks; 4 mile east of Mackey; 5 miles south and 2 miles east of Oakland City, and close to the dividing line of Monroe and Barton Townships, and it proved a dry hole at a depth of 1,324 feet. The fact that the well came in dry is discouraging to the operators who owned nearby leases as it was looked upon as an idea location for the opening up of quite a scope of territory. No. 1 well of the Ohio Co., on the same land and a line well, produced 30 bbls., completed in May, and is only 460 feet north of the dry hole, and naturally condemns much of the surrounding territory.

The Gem Oil Corp.'s test in the north-

(Continued on Page 99)

FAR WESTERN TEST AT SAGINAW FIVE MILES FROM DISCOVERY WELL

By Whit

SAGINAW, Mich., June 19. — The ninth successful completion in the Saginaw Field out of that many wells drilled reported last week speaks well for the surrounding territory and North Saginaw in general. The last completion was the seventh well drilled by the Saginaw Prospecting Co., which is No. 1 along the east line of the John Palvas farm, in the northeast quarter of Section 14, Saginaw Township, Saginaw County, and an offset to the west of the Bliss Petroleum Co.'s No. 1 on the Casper Ulrich farm and about a quarter of a mile northeast of the discovery well of the field, which is on property owned by the city of Saginaw, better known as the Daindorfer Woods. The Berea sand in the No. 1 Palvas farm was found at 1,814 feet, or 2 feet lower than this company's No. 4, about a quarter of a mile to the southeast. No.1 Palvas farm was drilled 8 feet in the Berea to a total depth of 1,822 feet, where it was given a shot, and after cleaning itself nicely filled up with 140 feet of fluid in one hour, indicating it will make close around 10 bbls. The well is being cleaned out and will be tubed and put on the pump.

The next well to be brought in is the Sun Oil Co.'s No. 1 on the Adam Nuerminger 20 acres, along the west line of the lease and directly north of this company's producing well on the J. W. Weiss 20 acres. This company has jacked over the drilling rig at its No. 1 on the west line of the John Schoenheit 20 acres, and just south of the Weiss farm well. Two fishing jobs were encountered in the first hole started, and being unable to get the tools out, the hole was given up and a new one started.

The far north drilling well of the Bliss Petroleum Co., on the west line of the Carl Boldabuck 160 acres, about 2 miles north of the discovery well and in the southeast quarter of Section 2, is shut down awaiting engine parts. The test is at a depth of 786 feet and has set the 8-inch casing. The same company has a fishing job at 690 feet at its other test in the southeast corner of the Fred Engle farm, in the southwest quarter of Section 10, Saginaw Township, and just north of the Shattuck Road and a mile west of the Sun company's producer on the Weiss farm. This company will soon start a second test on the Casper Ulrich farm, Section 14, where it has its producing well.

The Saginaw City Building Co. has started drilling its test on the E. E. Householder 371-acre farm, in the northwest quarter of Section 12, and about one-half mile to the northeast of the Sun Oil Co.'s producer on the Weiss farm and a mile directly north of the Saginaw Prospecting Co.'s No. 4 well. It looks very much as though the Berea sand will be found nearer the surface to the east of the field, as No. 4 of the Prospecting company is the farthest east well in the field and got the top of the sand at 1,812 feet. M. E. Lee is the contractor on the Householder well.

Returns From East

The Saginaw News Courier says: "A. H. Russell, a member of the firm of Russell Brothers, oil operators, who returned to Saginaw after a business trip to Pennsylvania, says that oil interests are keeping in close contact with the prospecting being done here. Mr. Russell said he had entered into a contract with the firm of Mong & Weaver, Ohio

(Continued on Page 100)

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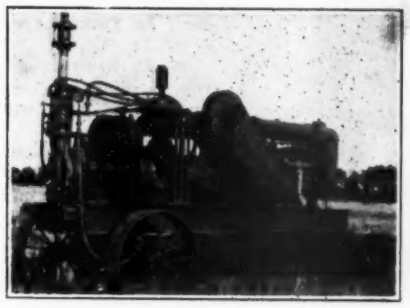
6

It provides data for spacing wells to prevent overdevelopment.

Correspondence invited from Producers, Promoters, and Capitalists.



Knowledge—
The Biggest Factor in Economy

Economy has rarely been associated with the search for oil. Not that the industry failed to appreciate economy, but because there was no means for providing the actual facts regarding actual subsurface conditions. Producers protected themselves against failure in so far as they could by surface geology. The study of surface conditions often was the sole basis for the expenditure of thousands of dollars.

Surface geology was all right in its day because there was no better method. But the fallacy of trying to determine the location of oil deposits 1,000 to 4,000 feet below the surface by a study of conditions at the surface is apparent to all.

Determining structure is now recognized as involving a study of strata lying below that which has been subject to erosion. Today, the core drill provides the actual substrata for study—the various layers, unearthed and brought to the surface in their exact sequence and with their characteristics preserved. Drill cores, therefore, provide producers with that knowledge which reduces failures, eliminates waste and assures economy in development and operation.

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MEN KNOWN IN OILDOM

J. W. Mashaw

J. W. Mashaw was appointed in March, 1925, to take charge of the Petroleum Refinery Statistics published by the San Francisco office of the Petroleum Division of the United States Bureau of Mines. Since that time, due to his initiative, several changes have been made in the scope of the report namely, the inclusion of all stocks held by refining companies instead of only refinery stocks and the collection of natural gas and gasoline statistics. In connection with the change from refinery to total stocks, Mr. Mashaw collected and published a statement showing total stocks of all commodities back to June 30, 1923. Mr. Mashaw collaborated with E. B. Swanson, of the Bureau of Mines in the publishing of the "Statistical Summary of the California Petroleum Industry—1925." This is the first time that such a report on the California petroleum industry has been issued by the Bureau of Mines, and it is regarded as the most comprehensive statement yet issued by the department. As a result of Mr. Mashaw's work in connection with this report complete data on the production and stocks of 56 of the 58 active California refineries are included.

Before going to the Bureau of Mines, Mr. Mashaw was chief clerk and accountant for the California Zinc Company of Winthrop, Calif., and also served as assistant to the maintenance engineer of the State Highway Department of Nevada. He spent two years in the navy during the war and was discharged with the rating of chief yeoman in 1919.

PERSONAL PARAGRAPHS

Joseph Danciger, of Wichita Falls, Tex., was a Fort Worth visitor during the past week.

* * *

J. B. Simler, of the Bruce-MacBeth Engine Company, is spending some time in the Texas Panhandle.

* * *

Earl J. Connelly, of the Darling Valve Company, is registered at the Amarillo Hotel, Amarillo, Tex.

* * *

W. H. George, New Orleans marketer, made a recent visit to Shreveport, La., and El Dorado, Ark.

* * *

F. J. Moore of Hughes & Company, Chicago, Ill., was in Shreveport, La., the past week-end on business.

* * *

Erle P. Halliburton, of the Halliburton Oilwell Cementing Company, is visiting the Texas Panhandle.

* * *

C. R. Tyrrell, of the Plateau Oil Company at San Antonio, Tex., has recently been on a trip to California on business.

W. L. Connelly, of the Mammoth Oil Company, has returned to Casper, Wyo., after spending some time at Amarillo, Tex.

* * *

C. O. (Ted) Collins returned to Fort Worth, Tex., last week from a visit to Amarillo and the Texas Panhandle Field.

* * *

Edgar J. Marston, vice president of the Texas Pacific Coal & Oil Company, left Fort Worth, Tex., for New York last week.

* * *

W. C. Brower, of the crude oil department of the Vacuum Oil Company, New York, is making a trip through the Gulf Coast region.

* * *

R. P. Batson, secretary, Chalmette Petroleum Company, New Orleans, La., made a recent business trip to Shreveport and El Dorado, Ark.

* * *

J. L. Dowling, vice president of the Texas Pipe Line Company, with headquarters in Houston, spent several days in Shreveport, La., last week.

* * *

Earl Mitchell, comptroller of the Texas Pacific Coal & Oil Company and mayor of Thurber, Tex., was in Fort Worth one day last week.

* * *

George J. McManus, who is interested in large acreage in Cameron Parish, Louisiana, is at Orange and Lake Charles, La., looking after his interests.

* * *

T. O. Winn, Shreveport, La., and in charge of The Texas Company's scouting offices in the Arkansas-Louisiana territory, is visiting in St. Louis, Mo.

* * *

A. M. Johnson, vice president and division manager for the Petroleum Iron Works, has returned to his Houston office from a trip to the California fields.

* * *

H. C. Howard, sales manager of the Reed Roller Bit Company, Houston, has gone to California to be absent several weeks in the interest of his company.

* * *

The honorary degree of doctor of laws was conferred on E. L. Doheny at the fifteenth annual commencement exercises of Loyola College, in Los Angeles.

* * *

Chief Deputy J. B. Case of the California State Mining Bureau, has just returned to Los Angeles following a trip to the old home town at Columbus, Neb.

* * *

E. H. Henely, chief geologist for the Houston Oil Company and affiliations, located at Houston, Tex., has gone to northern California for a three months' vacation.

* * *

C. F. Smalley, with the Lago Petroleum Corporation, resident geologist at the La Rosa Field, Maracaibo, Venezuela, is spending a short vacation in the States.

* * *

P. J. Sonner, president of the P. J. Sonner Gas Burner Company of Winfield, Kans., manufacturer of low pressure gas burners, is calling on the trade in California.

* * *

Henry G. Nevitt, refinery engineer, with the White Eagle Oil & Refining Company, Fort Worth, Tex., has been paying a visit in New York City for the past two weeks.

* * *

S. J. Brendel of McKeesport, Pa., has been staying at the St. Anthony Hotel in San Antonio and looking over the oil development and oil possibilities of that territory.

* * *

M. A. Bangs, formerly advertising manager of the Winfield Daily Courier, has joined the P. J. Sonner Gas Burner Company, of Winfield, Kans., as secretary-treasurer.

* * *

John B. Kerr, petroleum geologist of San Francisco, Calif., has just returned from an extended trip during the past four months to the Mid-Continent district, where he examined various areas for prospects for oil and gas in the States of Texas, Louisiana, southern Arkansas and Tennessee, in the interests of San Francisco clients.

G. H. Speary, formerly assistant manager of the Texas Pipe Line Company in the Gulf Coast and now engaged in drilling in the Arkansas fields, is at Hot Springs, Ark.

* * *

Charles Green, a Wyoming contractor, is loading tools and drilling equipment for the Amarillo district in Texas. Mr. Green has been busy in Colorado fields for the past year.

* * *

W. R. Ramsey, who returned to the Mid-Continent following the sale of his Long Beach interests to the Rio Grande Oil Company, was a visitor in Los Angeles recently.

* * *

W. P. Gage, of Dallas, former president of the Pure Oil Pipe Line Company, has gone to New York, accompanied by Mrs. Gage. They will spend the summer touring Europe.

* * *

Gen. R. L. Peeler, president and general manager of the California Petroleum Company, was in Bakersfield early this week looking over the new Poso Creek area recently opened up by the Shell interests.

* * *

J. C. Colligan, general superintendent of the northern division of the Texas Pipe Line Company, with Dallas, Tex., headquarters, attended a conference at the general offices in Houston during the past week.

* * *

James H. Buell of Tulsa, has been in San Antonio at the St. Anthony Hotel recently and told the newspapers that many oil men believed the greatest oil field ever developed will be opened in that section.

* * *

D. J. Moran, vice president and manager of the production department of The Texas Company, is in New York. It is understood the producing operations of the company will be directed from New York in the future.

* * *

R. C. Stewart, division manager of the Arkansas-Louisiana division of The Texas Company, spent several days in the southern part of the State with Charles H. Blish, of The Texas Company legal department on legal business.

* * *

Alexander Duessen, vice president in charge of the Gulf Coast district for the Marland Oil Company of Texas, and Louis H. Freidman his assistant, were in Fort Worth for one day last week on a hurried trip from Houston.

* * *

Lieutenant Commander W. H. Osgood, United States Navy, in charge for the Government of Teapot Dome, with headquarters at Casper, Wyo., is inspecting the processes in Oklahoma for extracting gasoline from natural gas.

* * *

N. O. Watson, who resigned recently as assistant manager of the Lago Petroleum Corporation, at Maracaibo, Venezuela, has returned and accepted the position of general drilling superintendent for the Caribbean Petroleum Company, relieving J. L. Chaillet, who is being transferred to British East Indies.

* * *

O. P. Harrison is back from a trip to India, where he has been superintending drilling for the Indo-Burma Oil Company. Mr. Harrison was formerly with major interests in the Mid-Continent and drilled a number of wells around San Antonio for the National Oil Company. He expects to remain in southwest Texas.

* * *

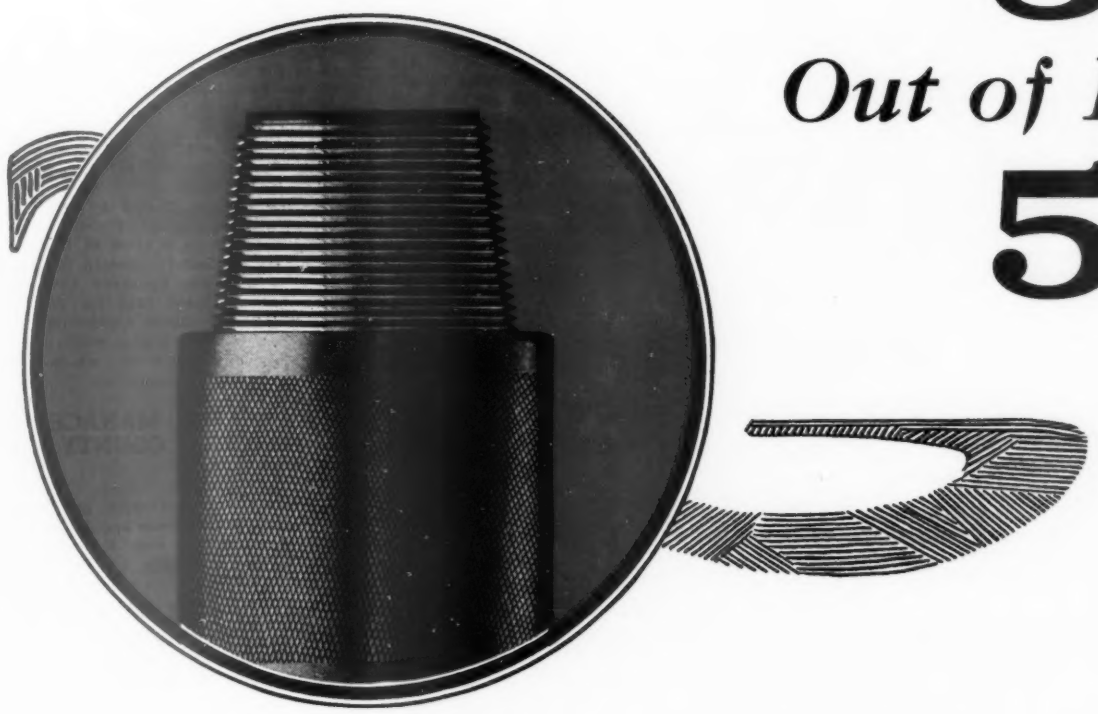
C. S. Hill has returned to Casper, Wyo., from Denver, Colo., where he accompanied Minal E. Young in attendance upon conferences with interests identified with the project of laying a gas pipeline from the Texas Panhandle to the city of Denver. Mr. Young continued his journey to the East, for further conference with interested parties.

* * *

Mrs. W. L. Russell of Lima, Ohio, returned to her home from a two weeks' visit with Mr. and Mrs. W. G. Skelly and Mr. and Mrs. George S. Bole, at Tulsa, Okla. Mrs. Russell attended the wedding of Miss Caroline Skelly and Freeman Burford at Tulsa. Mr. Russell, before his death, was one of the Trenton Rock Field's most prominent oil operators.

XUM

3 *Out of Every* 5



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NATURAL GAS DEVELOPMENTS

GAS COMPANY'S NEED IN PUBLIC RELATIONS

By Keith Clevenger*
Public Relations Director, Natural Gas Division, Empire Companies

We are assembled in this natural gas conservation school to study operating problems and develop practical ideas, which, in their application to the production, transportation and distribution of natural gas, will enable us to effect greater economies and greater efficiency of operation, and the consequent conservation of this most ideal fuel to greater and more beneficial use.

If the natural gas business is to live and thrive and measure up to the wonderful opportunity for growth and service of humanity that is possible for it, then it is incumbent on natural gas operators in every department of the industry to be everlastingly occupied in improving operating methods, safeguarding the business from physical deterioration, as well as improving the understanding of it on the part of our customers and the public.

The greatest problem of our business, is not the possible failure of natural gas fields, so much as our failure to continue to develop the brain power within our industry—to improve the understanding of it by the public and to develop new ideas of salesmanship. The development of this salesmanship depends upon a number of factors. First, our understanding of the business itself, and our ability to keep improving this understanding and adapting improved methods to our operating routine; second, the vision to appreciate the value of our industry to human progress; the vision to realize our responsibility for the progress and development of this industry to a greater field of service tomorrow than it enjoyed yesterday.

Natural gas of itself—the great transportation and distribution systems—would be practically of no value at all were it not for the people who patronize and use the service. The fact that the equipment of our business, mounting into an investment of millions of dollars, is of such a nature that most of it is concealed from the public eye—buried underground, or situated in remote, out-of-the-way places—that the service we render is so little understood or appreciated by the average man, makes it incumbent on each of us to exert every effort to keep our friends, and neighbors and acquaintances informed relative to our problems and our plans.

The early difficulties of the natural gas industry were due largely to a lack of vision. First, we were trying to dispose of a supposedly embarrassing by-product of oil development, in the quickest, easiest manner possible. Then we find the industry attempting to market natural gas as a commodity at so much per thousand cubic feet, just as coal, at so much per ton or wood at so much per cord. Finally, men of vision began giving some thought and study to natural gas and they found that this attitude had been all wrong; that natural gas could not be sold as solid fuels; that to sell natural gas involved a great, ever-increasing outlay of equipment, of facilities of service from well to the burner tip; that the future growth and welfare of the industry, as well as the maximum of service to the customer, depended upon the utilization of every possible idea of conservation and economy; the constant study and application of improved methods of service and salesmanship.

If we would continue to build our industry we must not lose sight of the fact that regardless of how much we progress as operators, if we do not keep up the educational work concerning our business, both within as well as outside the industry much of our mechanical and operating progress will be for naught. Every operator in our business, every dollar of invested capital is charged with an obligation of public service. Every move we make as natural gas men has some public relations significance, for the good or for the detriment of our business, or the pipeline, or wherever it may be, have our share of the public relations responsibility of our business. In all our contacts, social and business, we are the public relations men of our business. Ours is the responsibility to use every effort and opportunity to improve public understanding of our business and its problems.

*Before first Mid-Continent Gas Conservation School.

GAS WELL MAKING 110,000,000 FEET STRUCK BY LIGHTNING IN PANHANDLE

By J. L. Dwyer

AMARILLO, Tex., June 19.—The bigness of the Texas Panhandle is emphasized in every respect, so quite naturally when they have a fire down here they have a good one.

The accompanying picture was taken at the Gibson Oil Co.'s gas well which was struck by lightning. The well was making 110,000,000 feet of gas daily when ignited, and after burning gas flames for two days, began to make some oil. The dark part of the flame indicates the burning oil.

The derrick has long since disappeared and the rig irons and other metal equipment which was around the derrick floor is a twisted mass of charred and melted appearance.

At the time the picture was taken an effort was being made to extinguish the flames by shooting them out. The heat around the well was so intense that the lines used to pull the shot into place were burned as rapidly as they were placed in position. Streams of water were being rigged up to play on the heated material around the well, with the hope that the cooler atmosphere would permit the shot to be pulled into place.

The usual method of putting out gas wells which catch fire is to place a pulley on one side of the gas well, and run a line across the fire to a point on the opposite side of the well. A shot of gelatine is then loaded into asbestos cases and by means of the line is pulled to a position approximately two feet higher and two feet to one side of the top of the casing. When the shot is in this position it is exploded and the explosion expands the air and forms a pocket between the flaming gas and the gas which is coming from the mouth of the casing. The pocket is retained long enough to stop the fire.

The art of shooting out gas wells is now down to a fine point. Some months ago a well in the Papoose Pool in Hughes County, Oklahoma, caught fire. The shooter left Tulsa in the morning by airplane, shot out the fire and ate his lunch in Tulsa.

Some idea of the terrible heat which the gas well throws may be obtained when it is reported that a car at the photographer's left was stopped for about ten minutes at the scene, and the paint became blistered.

Gibson Oil Co.'s 110,000,000-foot gas well in Hutchinson County, afire. The rig was entirely destroyed. Burning oil with the gas is indicated by the darker smoke.

DEMAND NATURAL GAS FOR LOS ANGELES USE

LOS ANGELES, Calif., June 19.—A demand that the Los Angeles Gas & Electric Co. be required to supply its Los Angeles customers with natural gas, instead of the mixed natural and manufactured gas now being supplied, has been made to the State Railroad Commission by City Attorney Jess E. Stephens at the commission's hearings on the application of that company and three other gas concerns for increases in rates.

The hearing was started a year ago, when the commission instituted an investigation of an application of the Los Angeles Gas & Electric concern for permission to pay the Southern Counties Gas Co. an increased rate for natural gas. Later the Southern California and Midway Gas companies also made applications for rate increases, which are pending before the commission.

NEW GENERAL MANAGER FOR RICE COUNTY CO.

WICHITA, Kans., June 19.—Ed Hurst, long associated with gas properties in Kansas, has been appointed general manager of the new Rice County Natural Gas Co. which has its headquarters in Wichita, it was announced by O. A. Boyle, president. Mr. Hurst will establish his offices at Sterling, Kans., about 70 miles northwest of Wichita, from which he will direct the distribution of gas in Lyons, Nickerson and Sterling.

The new manager has been connected with public utilities for more than 20 years, recently as head of the Pittsburg, Kans., gas plant, a Doherty concern. The Rice County Natural Gas Co., which he will operate, has within the last few months acquired franchises to supply both domestic and industrial gas in that county. The contract for the laying of the pipeline, involving an expenditure of about $400,000, has alreday been let, and work has been begun. Several consumers will have gas by August 1, it was said

CANADIAN WESTERN EARNINGS

CHATHAM, Ont., June 19.—The Canadian Western Natural Gas, Light, Heat & Power Co., Ltd., of Calgary, shows earnings for the month of March, 1926, as approximately $377,063, a decrease of $36,565 from the same month in 1925; aggregate earnings from January 1 to March 1 of this year showing a decrease of $106,904.

NEW GAS COMPANIES

Two new gas companies recently were organized and incorporated in Texas, the Tricities Gas Co. of Stephensville, capital $25,000, and the Caprock Gas Co. of Wichita Falls, capital $5,000.

INCREASED EARNINGS IN SOUTH CALIFORNIA

LOS ANGELES, Calif., June 19.—Net earnings of the Southern Gas Co. of California for the four months ended April 30, last, totaled $838,380, compared with $702,672 for the corresponding period of 1925. The increase in net earnings for the first four months of this year is equivalent to $135,708, a gain of more than 19 per cent over the same months of last year.

Gross earnings for the four months aggregated $2,183,563 against $1,994,407 or an increase of $189,155, compared with the corresponding months of 1925.

Southern Counties Gas Co. is controlled through stock ownership by Pacific Lighting Corp., which owns all of the common stock.

UPHAM GAS LINE

OKLAHOMA CITY, Okla., June 19.—D. A. Upham, president of the Upham Gas Co. of Mineral Wells, Tex., has wired to his associates from New York that he has completed arrangements to finance the laying of the company's proposed 16-inch pipeline from the Shamrock gas field to Wichita Falls. The Upham Co. has made contracts at Wichita Falls for delivery of gas for industrial purposes only. It has franchises and is seeking others in the Texas Panhandle to supply gas for domestic purposes.

HOUSTON PIPE LINE SURVEYING EXTENSION

HOUSTON, Tex., June 19.—The Houston Pipe Line Co., subsidiary of the Houston Oil Co., is making a preliminary survey for a 12-inch line to connect with its main line at Mykawa, 15 miles south of Houston and extend to the plant of the Freeport Sulphur Co. at Hoskins Mound in Brazoria County. The sulphur company is now using from 1,800 to 2,000 bbls. of heavy Mexican crude for fuel.

The sulphur company has four electric drilling rigs in operation, drilling sulphur wells around the dome. The electricity is a by-product, being generated originally to preheat water to 320 degrees Fahrenheit which is pumped into the wells and melts the sulphur. The company uses about 4,000,000 gallons of water per day, most of which is pumped from a bayou 5 miles away.

The Houston Pipe Line Co. is distributing pipe for its extension from Live Oak County to the gas fields in Webb and Jim Hogg Counties. This distance is about 85 miles.

CARBON BLACK HEARING

AUSTIN, Tex., June 19.—The state railroad commission set for hearing June 19, application of the Phillips Petroleum company of Bartlesville, Okla., to erect additional units to its carbon black plant at Ivan, in the Eliasville oil field in Stephens County. The plant is to use residue gas from casinghead gasoline plants.

XUM

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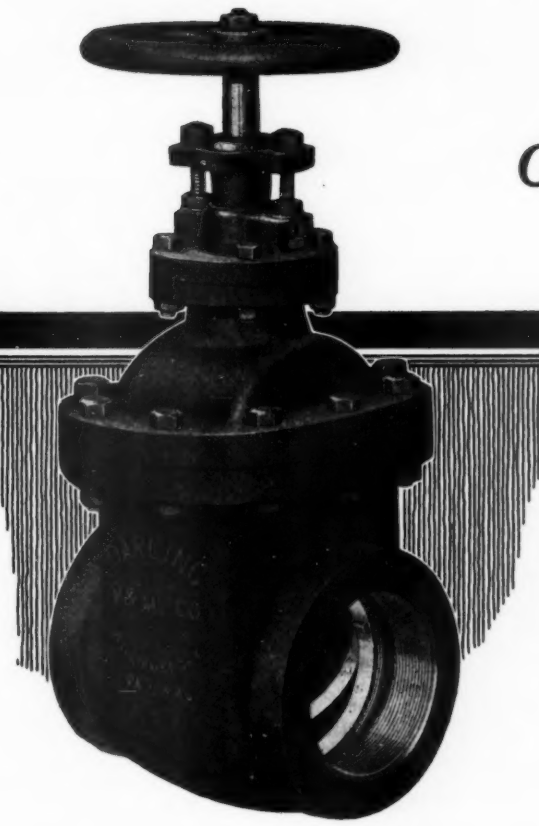

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Make a mental note of what you require in a valve for your particular work, compare it with what we say of Darlings, then ask any Old Timer how near right you will be in equipping throughout with Darlings.

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958

EQUIPMENT AND SUPPLIES

HOUGH NONCORROSIVE STEEL BALL AND SEAT

Repelex, a noncorrosive steel ball and seat of unusual merit, has just been launched by the Charles N. Hough Manufacturing Co. of Franklin, Pa. This product is the result of a constant demand in certain fields for a ball and seat that will stand up under the terrific punishment of acid and other strong elements that usually quickly impair the usefulness of an ordinary steel ball and seat. In the past the Charles N. Hough concern has fathered Steelex and Bronzex balls and seats, the former being said to be the largest selling trade-marked ball and seat in the world—all three are designed to fill certain specific needs and Repelex bids fair to become as popular in its field as either Steelex or Bronzex.

Hough pioneered the packaged ball and seat which always reaches the user in prime condition. All Hough balls and seats, it is added, are made of carefully selected materials and during all processes of manufacture each ball and seat are paired and ground together which, it is said, insures a high accuracy which is supplemented by frequent testing and retesting.

The Charles N. Hough Manufacturing Co. has been in the pumping specialty business for over a quarter of a century and its products are sold through a nation-wide organization of dealers located in oil towns.

NATIONAL COMPANIES OPEN DENVER STORE

National service to the producers of Colorado, Utah, New Mexico and western Kansas, has been further augmented by the establishment of a National Supply Companies store at 2590 Walnut Street, Denver, Colo.

Offices formerly maintained at 722-723 First National Bank Building have been discontinued but the National telephone number, Champa 536, remains the same.

Complete National stocks in this territory are now available at any of the following points—Casper, Basin and Rawlins, Wyo., and Lewistown and Shelby, Mont.

NOW THE HAYS CORP.

The Joseph W. Hays Corp., Michigan City, Ind., manufacturers of the well known Haye draft gauges, flue gas analyzers, CO_2 recorders, and other combustion instruments, announces a slight change in name to "The Hays Corp." Joseph W. Hays, who founded the business in 1907, has disposed of his entire holdings in the company in order that he may devote all of his time to his practice as a consulting engineer. Philip T. Sprague, the new president, has been closely associated with this business for a number of years as vice president and general manager. Several new instruments have just been placed on the market by the Hays Corp.

LELAND OPENS DALLAS BRANCH

The Leland Truck Equipment Co. of Tulsa, Okla., has opened a branch in Dallas, Tex. The branch will be in charge of Tom M. Lamberth, newly appointed district manager for Texas, and it will include showroom and warehouse facilities.

DOUBLE PRESENT FLOOR SPACE

Gibbs Welding Machines Co., Bay City, Mich., manufacturers of electric arc, spot, and seam welders, broke ground June 10 for an addition to its factory that will more than double their present floor space.

OIL COUNTRY GOODS AT NEW RECORD; PIPE MILLS PRACTICALLY FULL

By B. E. V. Luty

PITTSBURGH, Pa., June 21.—On the whole, demand upon the pipe mills in the past two or three weeks has been as heavy as it has been at any time this year, giving some of the mills practically a full operation and others nearly a full operation. In point of tonnage production, the output of oil country goods is probably at the highest rate ever attained. While there is a very fair demand for merchant pipe, this falls considerably short of the highest rates occasionally attained. With oil country goods running above any previous record, and merchant pipe running under some of the records, the total tonnage output of pipe mills is in the neighborhood of the record rate.

Operations at the pipe mills when expressed in percentage of capacity, do not seem close to the record, but that arises from the fact that there was quite an increase in capacity last year, by two new plants being built in the Chicago district, while through increased efficiency practically all mills are working better than formerly, in point of tonnage output per unit of capacity. Pipe mill operation at the present time is close to 85 per cent. Some mills are running practically full.

Current demand for merchant pipe is the best of the year, and this seems to be a reflection of the late spring. Ordinarily demand would run heavy in April and begin tapering off about this time, by jobbers reducing stocks for the summer. This year they did not stock up early in the year as they did last year, and mill shipments have been in close relation to the current consumption.

The steel trade as a whole continues its performance of showing altogether unusual activity, in point of prolongation of the period of activity. All postwar records for longevity of a period of heavy consumption have been broken. The war time record has not been broken, for there were say two and a half years of intensive production, and there has not yet been time enough in this movement to break such a record, as there was a great slump in steel production in 1924, and it is only in the 18 months beginning December, 1924, that there has been continued heavy production.

This exceptional and prolonged activity in steel has to be shown by the actual statistics of production. It is not indicated by superficial appearances, for the steel market is altogether lacking the snap and excitement that used to be seen when tonnage was large, and the steel consuming industries do not present the appearance of being exceptionally active or under any pressure. Nearly all of them are doing well, but consumption proceeds easily and smoothly and does not make the appearance of a great deal being done.

It requires constant and aggressive sales effort on the part of each producer to maintain operations, for there is little backlog business on books and most of the orders received are small.

Steel ignot production in May was 3,945,336 gross tons, representing 84.27 per cent of estimated capacity, taken at 56,000,000 tons per annum or about 180,000 tons per working day capacity. Both in April and in the six months ending with April, the production averaged 88 per cent. Mill operations now are estimated at about 80 per cent. Thus there has been very little decrease at a time of year when the trade is accustomed to expect a considerable decrease.

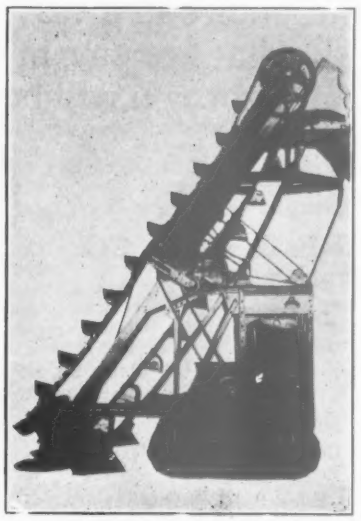
Pipe mill prices on merchant pipe and oil country goods are being fully maintained, and that is the case with most finished steel products. Sheets continue weak, but had no further decline in the past week. The recently announced advance in merchant bars, to 2.00 cents on large lots and 2.10 cents on carloads, is not yet established.

Pig iron and Connellsville coke continue very dull.

WALTON WITH WILSON-SNYDER

The increasing use of Wilson-Snyder pumps by the oil industry in the Southwest has made representation necessary. G. W. Walton, formerly of the National Supply Co., has been appointed representative with headquarters at 1605 Kirby Building, Dallas, Tex., telephone No. X-8586.

NEW ELECTRIC OR GASOLINE LOADERS



The Barber-Greene Co. of Aurora, Ill., has distributed literature regarding the new Barber-Greene loader pictured above. The loader is equipped either with an electric motor or gasoline power unit.

BETTER DISTRIBUTION OF OIL COUNTRY PIPE

Pittsbugh Steel Products Co., Pittsburgh, Pa., manufacturers of seamless steel tubing, are establishing new branch offices at Houston, Tex., and Tulsa, Okla. J. R. Edwards will be located at Houston as manager of that office and the Tulsa office will also be under his supervision. In order to give still better service to the Gulf Coast and Mid-Continent oil fields the company has established a pipe storage yard at Memphis, Tenn., and in addition to this will carry a stock of its products at Houston.

This indicates the greater emphasis which the Pittsburgh Steel Products Co. is placing upon oil country tubular goods requirements. The company has for several years been manufacturing seamless steel tubing, casing and drill pipe for oil country purposes, up to and including 6⅝-inch O. D. It is just now completing the installation of a large new Mannesman Pilger mill for making seamless steel tubing in long lengths up to 12½-inch O. D. This is the first mill of its type and size to be installed in an American plant, and it will produce a large volume of oil country tubing.

Mr. Edwards, who will have charge of the Houston and Tulsa offices, has been with the Pittsburgh Steel Products Co. for the past five years and was formerly with the Reading Iron Co., and the A. M. Byers Co. He is familiar with oil country requirements, and with the Memphis and Houston stocks the company will be in a position to give excellent service in this market.

PETROLEUM EXHIBITS AT LOS ANGELES SHOW

Petroleum products and oil field equipment are to be featured in the forthcoming Industrial Trade Exposition to be held in Los Angeles August 16 to 22, under the auspices of the Los Angeles Chamber of Commerce, according to G. A. Axelson, of the Axelson Machine Co., who is one of the committeemen in charge of arrangements.

A special enclosure on the east grounds of the new Shrine auditorium is to be set aside for petroleum products and equipment and leading manufacturers and producers in southern California have reserved space, according to Mr. Axelson.

ELLIS' DRAINAGE DEVICE

H. S. Ellis, of Dallas, Tex., is distributing a folder describing the patent automatic oil drainage device for removing oil from tanks when fired by lightning or other means. The address of the inventor is 504 Santa Fe Building, Dallas, Tex .

ON OIL PURIFICATION

The DeLaval Separator Co. of New York, is distributing reprints of an article which appeared in the "Electrical World" recently. The article was entitled "Oil Purification at Kearny Plant" and was written by D. F. Miller and R. H. Osgood of the Turbine Equipment Co., New York.

RUMBALL MOVES TO CLEVELAND

Fred G. Rumball, formerly branch manager of the Kansas City branch of the Timken Roller Bearing Service & Sales Co., has been promoted to the position of sales engineer, automotive division of the Timken Roller Bearing Co. Mr. Rumball will have his headquarters at Cleveland, with Edgeley W. Austin assistant manager of sales.

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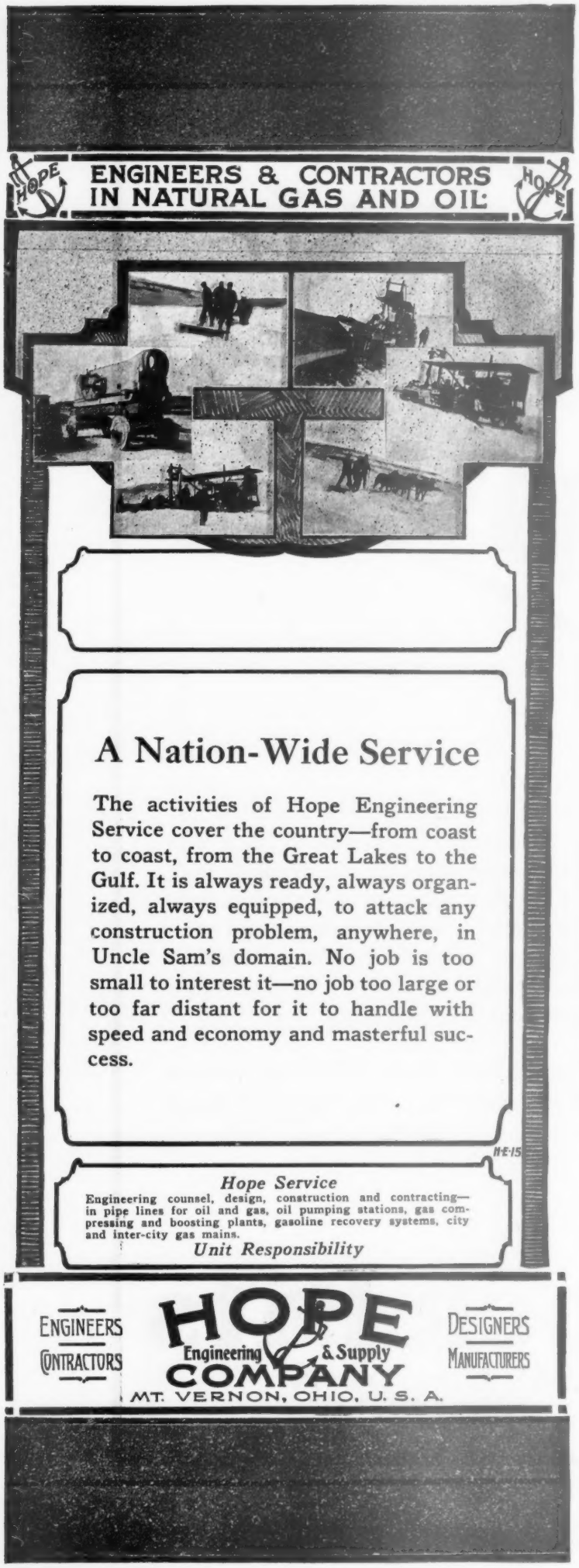
HOUSTON LOS ANGELES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CARE MUST BE TAKEN IN BLENDING BENZOL TO ASSURE GOOD MOTOR FUEL

The following discussion relative to the motor fuel value of benzol took place at a meeting of the Service Division of the Society of Automobile Engineers following an address by T. A. Boyd of the General Motors Research Corp. Mr. Boyd's address will be found on page 148 of this issue.

H. R. COBLEIGH, Secretary of Service, National Automobile Chamber of Commerce:—I would be interested to hear more about the use of benzol fuel. Recently I have been trying out what is known as Mitchell gasoline, which has become available in a limited quantity. Its results in my engine were very remarkable. After I had used that gasoline I could hardly believe that the car was the same. I used it until I discovered, after about one week, that the carbon needed to be removed again; it had been removed just before I began using this gasoline. The question immediately arose whether the carbon was caused by the benzol gasoline. I am inclined to think it was due to something else, such as loose piston-rings. I would be interested to know whether any difference in the rate of carbon accumulation can be traced directly to the use of benzol fuel. The benzol fuel that can be obtained is limited in quantity. Sufficient benzol is not available to treat all gasoline, at least to give a mixture of the proportions that seem to be most valuable. The gasoline I have mentioned is 48 per cent benzol.

The quantity of benzol obtainable would not go far toward treating the entire gasoline supply but, before we get too enthusiastic about benzol, it seems to me it would be well to find out whether we shall get reactions. For instance, in some cases corrosion has been evident after the use of benzol; but those who seem to know say that the benzol is not the cause, but that the benzol-treated fuels frequently are higher in their sulphur content, having more than the allowable 0.1 per cent that Mr. Boyd referred to.

Keeping Sulphur Low

T. A. BOYD:—It is well known that, when properly refined, benzol makes a good motor-fuel, provided it is also blended with a suitable distillate. One requirement of a good benzol fuel, which Mr. Cobleigh has mentioned, is that the sulphur content must be kept low. Experience has shown that this can be done. Another is that the percentage in which benzol is blended with the petroleum distillate should not be too high for, as is well known, benzol contains a higher ratio of carbon to hydrogen than does gasoline. As is indicated in Table I, 1 gallon of gasoline contains about 1.00 pound of hydrogen and 5.25 pound of carbon. But 1 gallon of benzol contains 6.80 pound of carbon and only 0.55 pound of hydrogen. The result is that fuels of the benzol type are likely to deposit carbon as such; that is, real fluffy black carbon like lampblack. Perhaps it is lampblack.

Anyone who is familiar with the servicing of automobiles abroad will recall that in Germany and in other places where fuels from coal tars are used extensively, the custom is to clean the spark plugs often. I do not know just how often this is done; probably every 1,000 miles, and certainly every 2,000 miles at least. Spark plugs are cleaned there by shaking them in a little device containing some benzol and provided with wire bristles, which run down between the skirt and the porcelain of the plug during the shaking process. Plugs are cleaned very effectively in this manner. The thing that makes it necessary to clean spark plugs thus is the fact that one of the principal fuels used is the light oil obtained in the manufacture of coke. This liquid, part of which is benzol, is very high in carbon and throws off a fluffy deposit which, if not attended to, may bridge the gaps of the spark plugs and cause ignition troubles.

About the best I can say of benzol is that, when refined properly and blended with a suitable petroleum distillate, it is a good fuel. A naphtha having too high a boiling-point must not be used, because the resulting mixture is then unsatisfactory from a volatility standpoint, and it must not be too high in sulphur. Benzol fuels, if the benzol is used in proper concentration, are entirely free from knocking in the ordinary automobile. This is probably the thing that has made Mr. Cobleigh so enthusiastic; it smoothed out the operation of his car until he thought he was riding behind a steam engine instead of one operating on gasoline.

MR. COBLEIGH:—The thing that seems to aggravate the situation is that fuel, even from the same source of supply, will vary greatly; one tank-car of fuel may show a low content of sulphur and the next one from the same company may be high. If that condition prevails throughout the country, will we, as service managers, be safer in warning our customers not to use benzol fuel, or do you think the risk is insufficient to warrant depriving them of the added pleasure they get from driving with it? You spoke about the knocking being less; it is true that in my case the knocking stopped entirely with the use of the benzol fuel, but I experienced other advantages besides that—decidedly better acceleration and about a 20 per cent increase in economy.

MR. BOYD:—Generally speaking I do not think that the service man is justified in recommending against the use of benzol fuel. Instances have occurred, of course, in which benzol has caused trouble because of being too high in sulphur, but that is also true of gasoline sometimes. Only when corrosion actually results from sulphur in the fuel would the service man be justified in advising a customer not to use any particular benzol fuel. In this connection, one should not forget, of course, that rusting in engines has resulted just from water produced by the burning gasoline. Benzol ought to be utilized as motor fuel. When properly prepared it is a desirable fuel and augments the supply. As a matter of fact, we may find it necessary to use it some day, if some of the prophets are right in what they say about the depletion of our petroleum reserves.

If Mr. Cobleigh began to use benzol fuel in cool weather, he would, no doubt, notice improved acceleration and a quicker warming-up of the engine because of the fact that the benzol, boiling at a rather low temperature as compared to that of ordinary gasoline, is more volatile and would approach nearer to what we might call aviation gasoline. On account of its greater volatility it would give more flexible operation, which the Society, working in co-operation with others, has found to be true from its tests on various gasolines. I think the conclusion from these tests was that, if the first 25 per cent of a fuel had a low boiling point, it would give desirable starting and operating characteristics. That property is exactly what benzol would add to the fuel. The boiling point of pure benzol is only 80 degrees Centigrade. (176 degrees Fahrenheit) and on the whole the benzol light oils that are sold are more volatile than ordinary motor gasolines.

J. WILLARD LORD, Harrolds Motor Co., Long Island City:—Would it be possible to cut down the mixture with the use of benzol? Is the chemical mixture of benzol and air higher than that of gasoline and air? You said that of gasoline was 15 to 1 and that of benzol was 12 to 1. In the presence of from 25 to 40 per cent of benzol, is it possible to increase the air in the proper ratio?

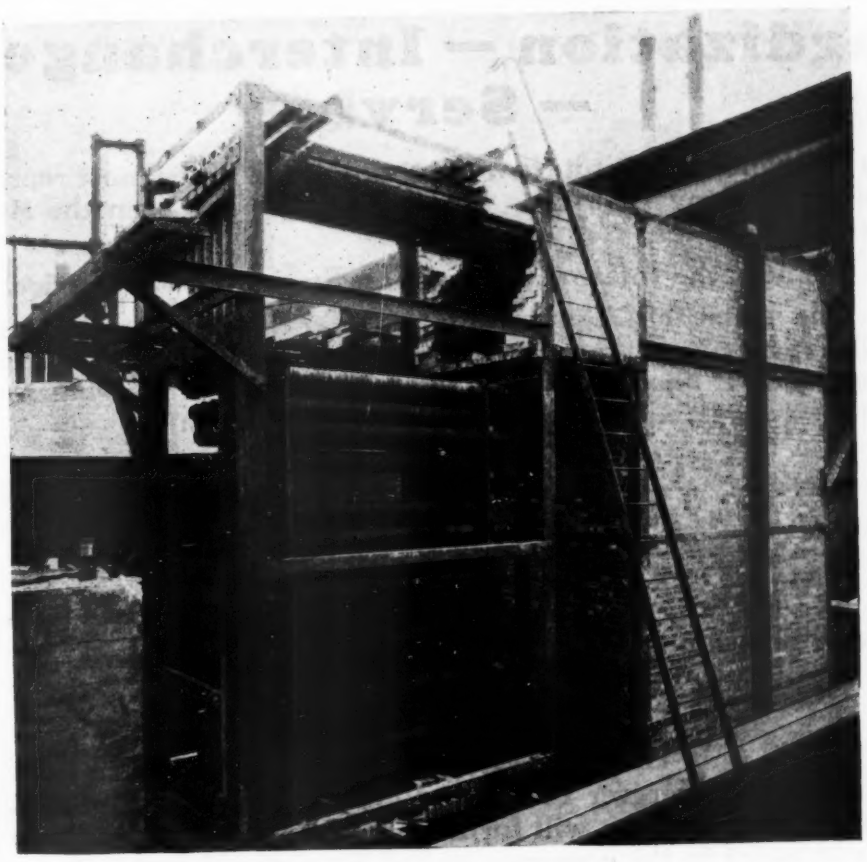
Leaning the Mixture

MR. BOYD:—Yes. It is generally possible to lean the mixture somewhat, because of the fact that benzol is much heavier than gasoline, having a specific gravity of about 0.88, whereas that of

(Continued on Page 106)

FOSTER

TUBE STILLS



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XUM

SALE OF UTE AND NAVAJO LEASES INCLUDES SOME CLOSE-IN ACREAGE

FARMINGTON, N. Mex., June 21.—The auction sale of oil leases on the Ute and the Navajo reservations to be held at Santa Fe on Wednesday, June 23, will, it is expected here, bring some unusually high bids for certain generally favored leases. The tracts to be offered for sale have undergone a very thorough survey by representatives of interested oil companies and firms. Some of the quarter sections are in what is considered proven territory. Wednesday's sale is expected to be the most interesting of any that have been held in New Mexico.

The first lease sale on Navajo Treaty lands was held in Santa Fe, October 15, 1923. This was the result of discovery of commercial oil on the Hogback Dome by the Midwest Refining Co. on September 25, 1922. This company had been granted an exploratory lease through a sort of town meeting of the Navajos of the San Juan (Shiprock) Agency on Hogback Dome. When oil in commercial quantity was discovered on this lease a request for other exploratory leases was made by a number of other parties and this developed the fact that no method had been devised by the Navajo Tribe or the Indian Department to handle such a situation. It was manifestly impossible to have a town meeting of some 30,000 Indians scattered over from 15,000 to 20,000 square miles. This led to the organization of a Navajo Council with representatives chosen from each of the agency districts according to population, and the appointment of a special commissioner to the Navajo Tribe. After this organization had been formed and former Governor Herbert J. Hagerman had been appointed special commissioner, the first lease sale was held as stated above.

Exploratory Leases Sold

At the first lease sale four exploratory leases were sold and a few tracts near the Midwest lease on Hogback Dome. None of the latter was tested. The four exploratory leases were those of Tocito, of 4,000 acres which was purchased by the Gypsy Oil Co. for $46,000; Table Mesa, of 3,200 acres, purchased by A. E. Carlton and associates; Rattlesnake, of 4,080 acres, purchased by S. C. Munoz and Beautiful Mountain, of 4,800 acres, purchased by Neil B. Field and associates. Drilling on three of these leases was started as soon as the necessary equipment could be assembled on the ground each using a standard rig, although production had been reached in several wells on the Hogback Dome by this time at less than 800 feet.

Those on which drilling was started were Tocito, Table Mesa and Rattlesnake. The latter was the only one to get oil in commercial quantity in the first hole. Oil was found in this structure at a depth of about 800 feet, and proved to be of the same high grade as that found on Hogback Dome and which had been considered a freak because of its high gravity. This well was a small one but others quickly followed nearly all of which produced more oil of even higher gravity some going over 70 degrees Baume.

Oil was not encountered in the first wells on either Tocito or Table Mesa. Later the Continental Oil Co., which had secured a working interest in Rattlesnake from Munoz and associates, made a deal with Carleton to drill another well on Table Mesa. This well brought in production of over 300 bbls. Seven wells have now been drilled on this structure, five of which are producers.

Still later, the Continental Oil Co. closed a deal with the Gypsy Oil Co. by which the former was to further test Tocito. A test was started on this structure about a mile north of the first well but it is not yet completed.

Potential Production

The potential daily production of these three producing structures is from 12,000 to 15,000 bbls. The wells on the Hogback Dome are from 640 to 785 feet deep. On Rattlesnake, they run from 740 to 900 feet deep and on Table Mesa, between 1,300 and 1,400 feet deep.

Four exploratory leases will be offered at the sale this week, Chimney Rock containing 4,800 acres; Biltabito containing 3,120 acres; Royal Arch containing 3,800 acres and Little Shiprock containing 3,200 acres. Chimney Rock lies on the north side of the San Juan River, a few miles from the Rattlesnake structure and in surface appearance is very similar to it. Only the drill can tell what is the extent if any of its producing area, but there is every reason to believe that it will be as great as that of Rattlesnake, which now has a daily potential production of about 10,000 bbls. with most of the wells in only the top sand and its extent west and northwest as yet undetermined. Chimney Rock and Little Shiprock should show production in the Dakota sands. Production in the Biltabito and Royal Arch structures is expected in the Shinarump and Pennsylvania formations.

Can Increase Output

The fact that the pipeline daily averages from this field shows only about 1,000 bbls. per day or less, leads many who are uninformed as to details to conclude that this field is of small consequence, but this small showing is due solely to lack of transportation facilities. The pipeline now being built to the Santa Fe Railroad at Gallup by the Continental Oil Co. and which will be finished perhaps by the middle of this month will increase this daily average at once to far more than any other field in Colorado or New Mexico.

When work was resumed recently on the Hall well on the Red Mesa structure Section 13-33-12, after a shutdown of a couple of weeks, it was found there was 1,000 feet of oil in the hole which was 3,475 feet deep. The well was shut down on account of caving to await the arrival of casing. Casing will be run to cure the caving and the well put on down to the Dakota sand, which should be encountered in another 100 feet or thereabouts.

The E. J. Miley interests have opened offices in Durango, as well as in Farmington, preparatory to an extensive drilling campaign in the San Juan Basin Field. Their first real tests for production will be made in the Red Mesa and Bloomfield districts, although validation wells may be drilled elsewhere in the meantime.

The Ute Consolidated Oil Syndicate straight reamed and lowered its 8-inch casing below the cavings and is cleaning out the hole which was 2,050 feet deep when work was suspended, preparatory to resuming drilling. It was believed at the time of the shutdown the test was within 100 feet of the first Dakota sand. This test is located 500 feet south of the north line and 150 feet east of the west line of Section 24-31-16, on the Ute Reservation and about 20 miles northwest of Farmington.

The Syndicate Brokerage Co. of Denver has taken over the drilling contract of J. F. Cross and associates on the Mesa Verde lease and has located the test site 485 feet north of the section line and 470 feet east of the west quarter section line of the SW SE, Section 17-30-12. Mr. Cross has been retained as head driller and has started the work.

The Continental Oil Co., drilling on No. 1 on the Tocito structure 36 miles southwest of Farmington, Section 8-26-18, has reached a depth of 1,090 feet and is running $5\frac{3}{16}$-inch casing.

The deep test on Rattlesnake structure has not drilled any since setting and cementing the last string of casing. They are waiting for the cement to set.

Operations by the Congress Oil Co. have been resumed on No. 1 Garland, and the casing has been run and the drilling resumed. It is located in the Coots Canon district, about 10 miles south of Farmington, on Section 34-29-11. Drilling was resumed at a depth of 1,285 feet.

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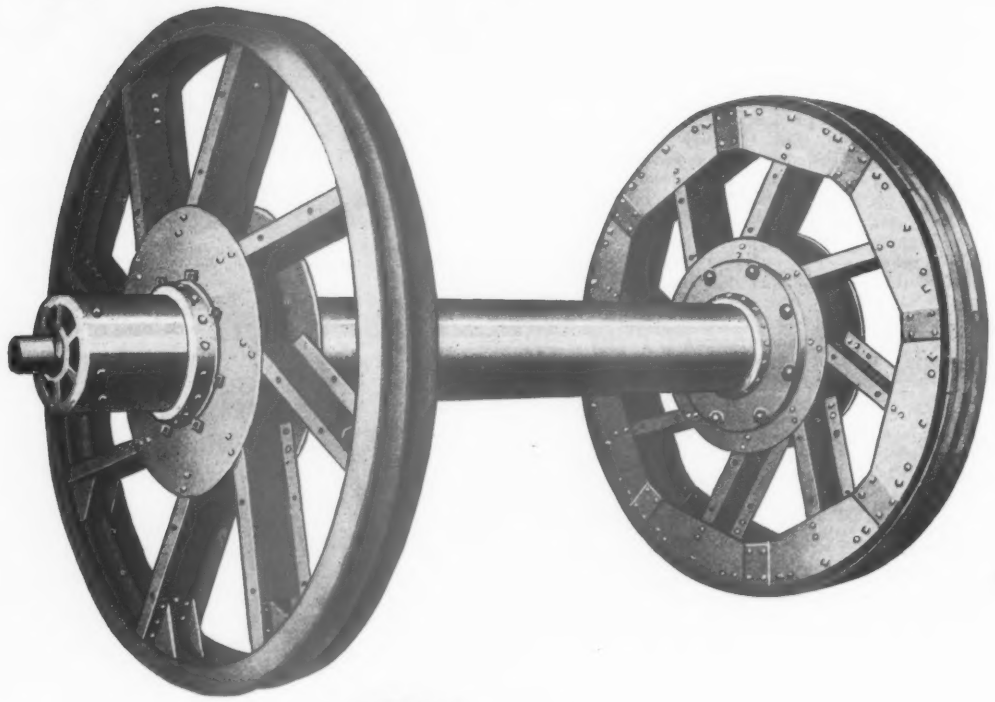

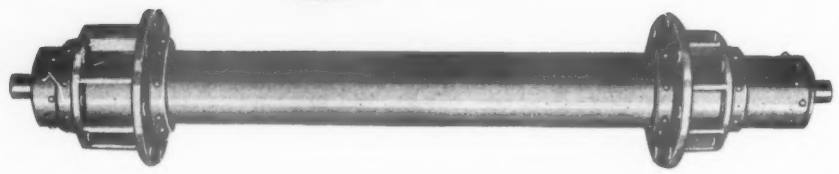

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Future of the Central West Fields

Operators There Believe It Lies Only in Developing Sands Already Known. Little Hope Expressed of Deeper Production

By James McIntyre

When one speaks of the Burbank Field in Oklahoma, it is to talk about a part of four townships—a few thousand acres, or when one speaks of the Bradford Field, in Pennsylvania, it is to include about 105,000 acres lying in McKean County, Pennsylvania, and in Cattaraugus County and Allegany County, New York, but when the Lima Field is the subject of conversation, it takes in all the development in Wood, Hancock, Allen, Auglaize, Sandusky, Mercer, Van Wert, Seneca, Lucas, Ottawa, Shelby, Hardin, Paulding, Defiance, Fulton and other counties in Ohio. It is not a field—it is a producing division—which has, since the middle eighties, produced many millions of barrels of oil.

The north or east Indiana Field, including several counties on the Ohio border, is in fact a part of the Lima territory as the production from that area comes from the Trenton Rock, the big producing sand in the Lima Field.

The writer was back in the Lima Field recently and was given the opportunity in Toledo, Findlay and Lima to get the views of producers in that field on the general oil situation, but in particular their own industrial problems. The consensus of opinion was that none of the central west territory, and this included the Lima, Indiana and Illinois fields, had any hope of obtaining oil in large quantity below the sands already known and developed.

This fixed idea may be displaced by the results in the deep test being drilled by T. D. Friend of Columbus, Ohio, near the town of Charleston, in southeastern Clark County. This well is below the Trenton and at a depth of 4,170 feet, was believed to be about 200 feet above the pre-Cambrian horizon, which is about 1,600 feet deeper than the pre-Cambrian was found near Findlay in the first deep test drilled about 13 years ago. If this well opens a commercial production it will surprise the general run of Central West oil men. If it is dry the result will occasion no flurry.

Want Higher Crude Price

The Lima Field operators declared that at the price of oil this year, (up to the recent advance of 25 cents), they had made no money and that last year they had actually lost money, producing oil from the Trenton. The 25-cent advance, wac received with much satisfaction as it took them out of the "red." But a 25-cent advance in crude is not sufficient to stir the great body of Lima Field operators to a general drilling campaign. The Trenton rock has been so drained of oil that large producing wells could not be expected and there is too much hazard in drilling to make it feasible to operate with only very small wells as a probable reward. There is a vast area on which wells could be drilled in the more than a score of counties making up the Lima and eastern Indiana territory, with some hope of production—but it would be small production of oil and a large production of water with the oil. The average production of oil and water in the Lima Field is on a ratio of 1 to 4, that is, 1 bbl. of oil to 4 bbls. of water. The Ohio Oil Co. abandoned a lease a few months ago that was producing 60 bbls. of water to every barrel of oil. The oil and water is pumped together into one tank and when the fluid separates the oil is syphoned into another tank and the water is drained off.

Interested in Western Fields

Many Lima Field operators are interested financially in the fields west of the Mississippi River. They have leases or interests in leases, wildcat and productive in Kansas, Oklahoma, Texas and New Mexico. The great Ohio Oil Co., the largest operator in the Lima Field, is a producer in Kansas, Oklahoma, Arkansas, Louisiana, Montana, Wyoming and other western states, and even buys oil in Montana, Wyoming, New Mexico and in the Mid-Continent. Its posted price rules in some of the western fields. Lima operators, having exhausted all hope of big returns in their own territory or in any of the fields east of the Mississippi River, have reached out into the West as the only place in which to invest surplus capital.

In Kentucky, the situation is much the same as in Ohio, Illinois and Indiana in regard to the chance of production from deeper zones. Kentucky operators seen by the writer in several cities of that State were one in the opinion that Kentucky's future as an oil State was in the development of the sands now known, in territory which had not yet been subjected to development. There is more wildcatting in Kentucky than in any of the three other states, but lease owners want a higher price for crude to warrant them testing territory in the very mountainous parts of east Kentucky. Most of the tests now are in the western half of the State where the topography is not as rugged as on the east side.

Deep Tests in Lima Field

The matter of deep drilling in the Trenton rock area of northwestern Ohio was first broached many years ago. All the production found in the Trenton had been coming from near the top of the rock for over 20 years and then drilling uncovered production at a horizon about 600 feet deeper stratigraphically.

In 1912, a company formed of Findlay men decided to test out the thickness of the Trenton rock and the strata underlying it and started a well on the D. L. Norris farm in Section 3, Marion Township, about 3 miles northeast of the city, and the Ohio Oil Co. started one on the J. H. Grubb farm, in Section 9, Liberty Township, in the same field. In November, when the well on the Norris farm had reached a depth of nearly 3,000 feet, J. E. Fennerty of Findlay informed the United States Geological Survey that the well was about 200 feet below the Trenton and that the drillings indicated granite formation. D. D. Condit of the United States Geological Survey and Doctor Johnston of the Carnegie Geophysical Laboratory went at once to the Findlay district, Condit to make a study and report on the formations found and Doctor Johnston to record the temperatures of the well.

D. D. Condit later made a report which was published in the American Journal of Science, August, 1913.

The wells were drilled to granite, touched at 2,770 feet and penetrated to 2,980 feet, total depth. It was a failure below the regular production depths.

In his report on the Norris and Grubb wells, Mr. Condit in the American Journal of Science, August, 1913, wrote as follows:

Interesting Geologically

"The combined records of the Norris and Grubb wells are of unusual geologic interest as the drill passed below the base of the Paleozoic and penetrated the pre-Cambrian rocks, concerning which nothing else has been known heretofore in this part of the United States. There is given below a geologic section which represents the combined well records. All but the lower 610 feet of the section presents data derived mostly from the Grubb well record, with depths adjusted so as to coincide with those in the Norris well. This seems permissible for the distance between the two wells is only a few miles. The question as to the age and relations of the various beds was discussed with Dr. E. O. Ulrich of the United States Geological Survey and the correlations used in the section are those suggested by him, adapted to the nomenclature and classification in current use by the United States Geological Survey.

Niagara Lime Near Surface

"Limestone of Niagaran age forms the surface in the vicinity of Findlay. This is generally covered with 10 to 100 feet of glacial drift. In the Grubb well this limestone was found to be 311 feet thick. The underlying strata in descending order are shale and brownish gray limestone of either the Clinton or upper Medina (Ohio 'Clinton') age; then gray and red shale probably to be correlated with the lower Medina on the one hand and the Richmond on the other, underlain in turn by gray brownish shales with a thickness of 732 feet, representing the lower formations of the Cincinnatian series. The top of the oil bearing limestone, generally known as the Trenton was struck at 1,165 feet and the drill continued in limestone and shaley beds, probably of Black River, Lowville and Stones River age, to a depth of 1,894 feet, giving a thickness of 729 feet for these strata. Then comes 406 feet of white granular quartoze limestone and sandstone all of which represents St. Peter sandstone. At 1,135 feet below the top of the Trenton is a dark, glauconitic, dolomitic limestone 60 feet thick that is referred to as the Upper Cambrian. Its thickness as shown by the Norris record is 395 feet. All of it is probably upper Cambrian. At the base of the sandstone is 15 feet of red, green and gray clay, which rests upon granite. Drilling was discontinued after the granite had been penetrated to a depth of 210 feet.

Trenton at 1,165 Feet

"The Trenton limestone was found at a depth of 1,165 feet in the Norris well and the base of the garnetiferous sandstone (bottom of the Grubb well) at 2,755 feet. As has already been stated no samples were saved in this portion of the well but the drillers report a uniform gray grit throughout the interval. The belief that the lower 395 feet of the section is entirely sandstone is corroborated by the mineralogical examination of samples collected from the sand cone back of the derrick where the pumpings were dumped. A cut was made through this cone and thus a condensed section, showing the principal drilling beds in inverted order, was obtained. Immediately underneath the granite drillings were the thin films of gray, green and red clay, mentioned, then came several inches of rusty gray sand which corresponds to the thick upper Cambrian sandstone.

The greater part of this was clean and contained a few accessory minerals. A little deeper in the sand was a thick dark band which represented the dark upper Cambrian dolomite.

Geologic Section of Wells at Findlay, Ohio

	Depth In feet		Thickness
Glacial drift	0-	87	87
Silurian:			
Niagaran strata:			
(c) Limestone, dark gray, slightly dolomitic, dense textured	87-	134	47
(b) Limestone, gray, crystalline, slightly dolomitic	134-	195	61
(a) Limestone, dark, minutely crystalline strata of Medina or Clinton Age:			
(b) Shale, calcareous	245-	255	10
(a) Limestone, pinkish, brownish, and gray; minutely granular texture (probably Ohio "Clinton")	255-	343	88
Ordovician:			
Cincinnatian series:			
Strata probably equivalent to Richmond and lower Medina:			
(b) Shale, grayish	343-	399	56
(a) Shale, red	399-	423	24
Strata of Maysville, Eden and Utica Age:			
(b) Shale, a gray to dark gray, usually pure clay shale. Some parts resemble flint clay. Grit is almost wanting. Scattered particles of marcasite present. A slight flow of gas reported at 770 feet in Norris well. No fossils were seen. (Maysville and upper Eden.)	423-	965	532
(a) Shale, dark brown, calcareous, very fossiliferous. A species of Dalmarnella was the only form recognized. The age of the beds is probably Utica and in part Eden	965-	1,165	200
Mohawkian series:			
(c) Limestone (Trenton? or Galena?) highly dolomitic, brownish gray, granular texture, having numerous cavities lined with crystals of dolomite and marcasite. In the Grubb well there was a show of oil 23 and 46 feet below top and salt water at 40 feet, which rose 200 feet. This is the Trenton "oil rock" of northwestern Ohio.	1,165-	1,233	68
(b) Limestone, slightly dolomitic varying from dark gray to nearly black, dense textured. Some shaly beds. Fossils are plentiful, and indicate Black River Age	1,233-	1,325	92
(c) Limestone, light gray to dark gray, minutely crystalline; no fossils seen, but probably of Lowville Age	1,325-	1,401	76
Lower Ordovician series:			
Strata of probable Stones River Age:			
(e) Limestone, dense textured, dark	1,401-	1,637	236
(d) Limestone, light gray, minutely crystalline	1,637-	1,675	38
(c) Limestone, dense textured, dark becoming brownish near base. Some shaly beds present. Show of oil near top in Grubb well. These limestones are devoid of fossils and vary from light dove color to dark bluish. The texture is smooth. Some portions are argillaceous and resemble lithographic limestone	1,675-	1,850	175
(b) Shale, bluish, green, slightly calcareous	1,850-	1,875	25
(a) Limestone, dark gray	1,875-	1,894	19
Strata of probable St. Peter Age:			
(l) Limestone, dolomitic, white, granular with quartz grains in lower portion. In the Norris well a little oil was found distributed through the rock at a depth of 1,900 to 1,960 feet, and at 1,990 feet was the "Blue Lick" water, which rose 1,200 feet	1,894-	2,085	191
(b) Sandstone, calcareous, white. Quartz grains well rounded and assorted	2,085-	2,105	20
(g) Limestone, white, slightly dolomitic, minutely granular. Some quartz grains present	2,105-	2,155	50
(f) Sandstone, with calcite, mircocline and orthoclase as prominent accessory constituents	2,155-	2,195	40
(e) Limestone, slightly dolomitic, white, siliceous, minutely, granular	2,195-	2,229	34
(d) Sandstone, with much calcite. Quartz, grains rounded, average diameter 0.4 mm	2,229-	2,239	10
(c) Limestone, dolomitic, dark gray, sandy	2,239-	2,255	16
(b) Clay, green	2,255-	2,260	5
(a) Sandstone, with few accessory minerals besides calcite. Quartz grains show secondary enlargement	2,260-	2,300	40
Upper Cambrian:			
(c) Limestone, dolomitic, dark, minutely granular. Much green galuconitic material and some quartz. Basal portion sandy and brownish gray. Some of the rock particles have veinlets of calcite	2,300-	2,360	60

(Continued on Page 95)

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The advent of No. 45 dates back to the time when cracking as a commercial practice was adopted and if there has been a failure of a Hills-McCanna plug closure that has resulted in loss of life or property we have never had it called to our attention.

Hills-McCanna No. 45 closures and other products are standard equipment in those cracking and tube stills that are pre-eminent in the petroleum industry—our products are to be found in every prominent petroleum refining district in the world.

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MEXICAN FIELDS

(Continued from Page 54)

feet, and No. 4, same, is rigging. Credito Petrolero's No. 11 Piedras cemented 8-inch at 1,215 feet, gray lime, and is resuming; No. 12 is ready to spud, and No. 40 Lomas y Llanos is rigging. East Coast Oil Co.'s No. 49 Laguna de la Milpa is drilling in gray lime at 1,840 feet; No. 56 has cemented 8-inch at 1,364 feet in gray lime, and Nos. 68 and 69 are rigging. English Oil Co.'s No. 12 Tampascos is in gray lime at 1,650 feet. International Petroleum Co.'s No. 25 Tanchicuin is in gray shale at 795 feet.

Mexican Sinclair Petroleum Corp. has Nos. 28 and 30 Tananturo rigging, the latter waiting for permit. The latter is also true of its No. 17-A, Lot 2, Camolote. Mexican Gulf Oil Co.'s No. 4-A Piedras is in broken lime at 1,100 feet; No. 6 is in gray lime at 1,780 feet; No. 18 Flores is in sticky sale at 830 feet, and No. 26 is rigging. Transcontinental Petroleum Co.'s No. 1 Robles is rigged, waiting permit; No. 24, Lot 1, Tanchicuin has the same status; No. 11, Lot 14, same, is a derrick; No. 27 Barbarena is a derrick; No. 19 Tampacas is running 8-inch in gray lime at 1,370 feet; No. 22, same, is in gray shale at 580 feet. Mordelo Vincent, No. 1 Maza-Tamante is 2,260 feet, gray lime, waiting for orders. It has an oil and gas show. Tampascos Oil Co.'s No. 19 Robles is in gray lime at 1,370 feet, and No. 22 is in shale at 450 feet.

At Cacalilao

In the Cacalilao sector, operations follow: International Petroleum Co., in Lot 5, No. 263 is fishing a bit at 710 feet; Nos. 270, 271 and 272 are all in gray lime at 1,815, 1,975 and 2,195 feet respectively, and No. 273 is a derrick. Mexican Sinclair Petroleum Corp.'s No. 86-A, Lot 2, is in gray lime at 1,882 feet, with a good showing of oil. Transcontinental Petroleum Co.'s operations in Lot 4: No. 247 has tested and cemented 8-inch in gray lime at 1,303 feet, and is drilling in; No. 257 is in lime at 2,250 feet, a deep hole; No. 258 cemented 8-inch at 1,200 feet in gray lime. La Corona Petroleum Co.'s No. 182, Lot 4, is rigging.

South Fields

Huasteca Petroleum Co.'s No. 79 Cerro Azul, in the south fields, is in gray shale at 1,440 feet; No. 81 is in basalt at 375 feet; No. 82 is rigging. In Tierra Blanca, Huasteca's No. 62 is in the Tamasopa at 2,096 feet; No. 65 is in brown shale at 1,300 feet; No. 66-A is in hard gray shale with pyrites at 2,523 feet; No. 72 is in brown shale at 1,055 feet; No. 77 is in brown shale at 80 feet, and derricks are up over two more locations. International Petroleum Co.'s No. 52 Toteco cemented 6-inch at 600 feet in shale.

At Ebano

To revert to the northern fields, consider Ebano. Mexican Petroleum Co.'s operations there are best epitomized as follows: In the Chijol, No. 46 is in gray shale and shells at 1,115 feet; No. 51 is in gray lime at 1,480 feet; No. 56 is in the same formation at 1,415 feet, and No. 59 is a derrick; No. 8 Silva is in gray shale at 830 feet. In the La Dicha, No. 72 cemented 8-inch in gray lime at 1,130 feet; No. 74 is in the same formation at 2,186 feet; No. 102 cemented 8-inch in gray lime at 1,800 feet; No. 104 is in gray lime at 1,222 feet; No. 106 is in white lime at 2,310 feet; No. 112 is rigging; No. 113 is in gray lime at 1,600 feet; No. 114 is rigging, and No. 115 is rigged, waiting for permit. In the Midway, its No. 48 is rigged, waiting for permit; No. 49 is drilling in the Tamasopa at 2,225 feet, and No. 51 is a derrick. In the San Pedro, its No. 22 is in gray lime at 1,950 feet, and it has here two locations rigged and waiting for permit. In La Pez, its No. 12-A is drilling by a bit at 1,865 feet in gray lime. In Mendez, it is rigged up on No. 19, waiting for permit, and No. 20 is a derrick. Mexican Petroleum also has a derrick up for No. 102 Conteca. In this same Ebano sector, National Lines, on its right of way has No. 45 Chapacao in gray lime at 2,140 feet; No. 47 is in the Tamasopa at 2,281 feet, and No. 48 is in white lime at 2,600 feet, and it is rigging two locations in the Conteca.

Northern Miscellany

The miscellaneous pools in the northern fields offer the following: At Corcovado, La Corona Petroleum Co.'s No. 24, Lot 6, is rigged, waiting for permit. Mexican Sinclair Petroleum Corp.'s No. 4-B, Lot 1 Garruche (Corcovado) is also rigged, waiting for permit. Rich Mex Oil Co.'s No. 6, Lot D, is in shale at 740 feet. Transcontinental Petroleum Co.'s No. 28, Lot 6, is in hard gray shale at 1,250 feet.

At Los Esteros, American International Fuel Co.'s No. 30 is in hard shale at 1,065 feet; and No. 31 is in sticky shale at 1,050 feet.

In the Marland Field, Cia. Petroleum Franco Espanola's No. 55 Limon is in lime at 2,305 feet; No. 58 is in blue shale at 130 feet; No. 59 is in gray lime at 1,530 feet; No. 60-A is in blue shale at 700 feet, and derricks are up over two more locations.

At Topila, La Corona Petroleum Co.'s No. 20 is in shale at 2,250 feet; and No. 21 continues with cement set around 4¾-inch in gray lime at 2,225 feet. Cia. Petroleum Financiera, No. 2, Lot 14, Paciencia de Aguacate, is drilling in the San Felipe at 1,796 feet. Cochrane and others' No. 10, same, is in the Tamasopa at 2,395 feet.

In Chapacao-Corcovado, Mexican Gulf Oil Co.'s No. 17-A Chapacao is in white lime at 2,039 feet; No. 25-A is rigged, waiting for permit, and No. 42 is in gray lime at 1,885 feet.

In the Federal zone of the Panuco Tamesi Rivers, National Lines' No. 59 Barbarena cemented 8-inch in shells at 1,214 feet; and No. 56 Altamira has done the same in shells at 1,110 feet.

In San Mateo, southwest of Panuco, Cia. Petroleum Financiera is around 2,175 feet in hard gray shale.

Sterling Huntley's Death

The news of Sterling Huntley's death at the hands of assassins in southwest Texas, not far from Laredo, was quite a shock to his many friends in Tampico, where he was well known in geological circles, especially. Huntley did much work here a few years ago, as well as in the Isthmus country to the south. He was universally liked by all who knew him as a young man of high professional attainments and of equally high character. When the news of his death was confirmed, the Tampico Geological Society, through its secretary, S. A. Grogan, sent the following cable to L. G. Huntley, his brother at Pittsburgh: "Tampico Geological Society deeply grieved death Sterling Huntley, whose active investigations in Mexican fields have enabled us to appreciate his friendship. Therefore, wish to express to you and Mrs. Huntley sincerest condolences."

Personal Mention

Tampico Geological Society gave a farewell dinner last Wednesday evening for Paul Weaver, for several years chief geologist of the Mexican Eagle Oil Co., who has resigned and is leaving soon for the United States; and, for Charles Laurence Baker, chief geologist of the Southern Pacific's oil subsidiaries, who is returning to United States headquarters after an extended stay here with the East Coast Oil Co.

Harry Abruns, of San Francisco, of the geological staff of the Southern Pacific, has arrived here to be chief geologist of the East Coast Oil Co., vice Mr. Baker, who is leaving for Tucson headquarters.

CALIFORNIA FIELDS

(Continued from Page 42)

was in about the same condition. Production in the Santa Fe Springs Field has been comparatively steady for several months and production figures indicate the daily average output during May was around 48.500 bbls. The Pan American has staked a new location in the Rideout Heights district of the old Whittier Field and will probably have material on the ground within a few days for No. 1 Ramsey. The company's initial driller

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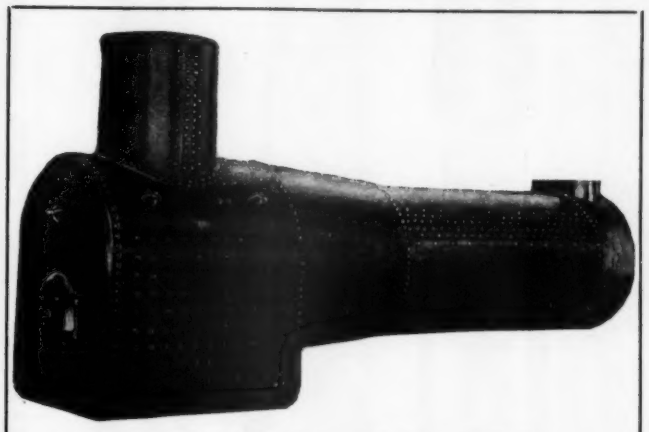

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The new 85 H.P., 175-lb. Code "Donovan" Boiler was recently introduced into those fields in Oklahoma where the drilling is deep and "big boilers" are required. We give the following as to their reception:

An old-time contractor bought two and put them to work at once. They proved to be so satisfactory that Mr. Contractor told us that he wanted two more just as soon as we could get them to him. He says this type is a dandy steamer and has ample power for "deep digging" and all it requires.

He has used boilers of various makes and has many years of experience to base his actions on. He prefers DONOVANS. This is worth consideration. The DONOVAN is more than an ordinary boiler. This man is one of the many who found it so.

Now, the moral is, if you are not already a user, you should consider the DONOVAN. Try it the next time you need a boiler. It has never been surpassed. It is strong, safe, dependable, powerful, and backed by long experience in boiler building.

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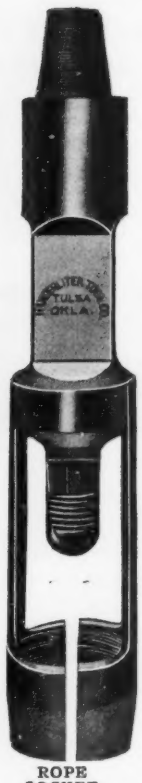
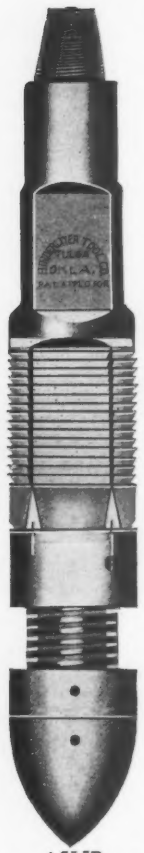
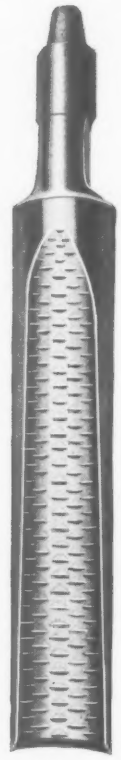

ROPE SOCKET SPEAR


4-SLIP TRIP CASING SPEAR

3-SLIP TRIP CASING SPEAR

HOLLOW CASING SPEAR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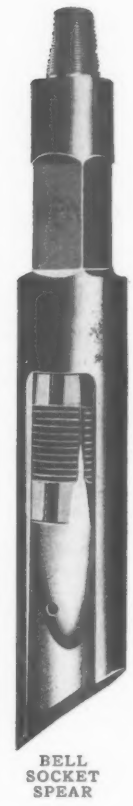
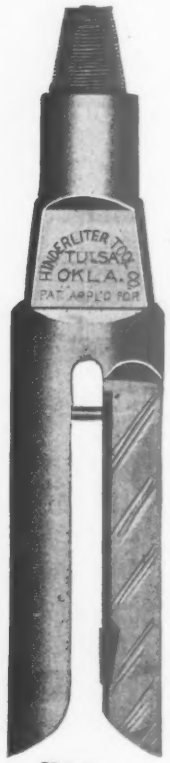
ECCENTRIC SOCKET

SECTIONAL VIEW ECCENTRIC SOCKET


BELL SOCKET SPEAR

COLLAR LIFTER

LATCH JACK


SLIVER TOOL

JAR UP AND JAR DOWN CASING RIPPER

TWO-IN-ONE WALL HOOK

CASING TOOL COUPLER SOCKET

STUB SPEAR

HINDERLITER

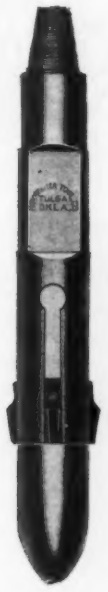
KICK-OFF TOOL

ECCENTRIC GRAB

SLIP RING SOCKET

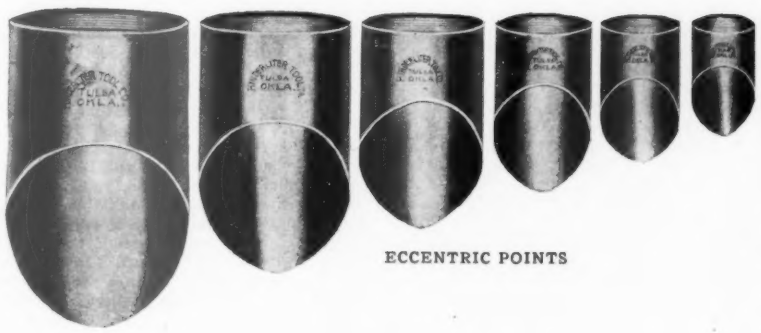
WIRE ROPE KNIFE

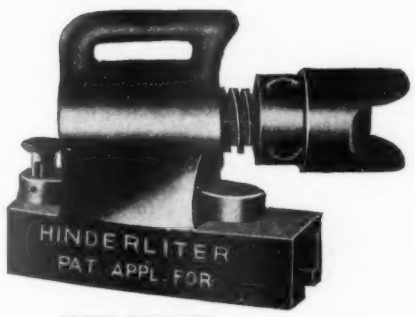
CASING COLLAR RIPPER


4-WAY UP RIPPER

JAR UP AND JAR DOWN CASING RIPPER

JACK OR CASING RING

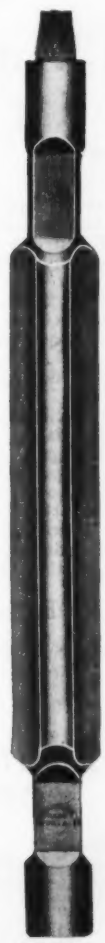

ECCENTRIC POINTS



JOINT BREAKER

4-WAY CASING PERFORATOR

SIDE ROPE SPEAR WITH HARPOON KNIFE


4-WING SUBSTITUTE

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Great Northern Tool & Supply—Montana
Hinderliter Tool Company—Oklahoma, Kansas and Texas
Murray Tool & Supply Company—Oklahoma, Kansas and Texas
New Martinsville Supply Company—New Martinsville, W. Va.
Petroleum Specialties Company—Montana and Wyoming
Republic Supply Company—Oklahoma and Texas
Rope & Cordage Company—Parkersburg, W. Va.
Southwest Supply Company
The Staves Supply Company—Kansas
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Western Supply Company—Oklahoma, Texas
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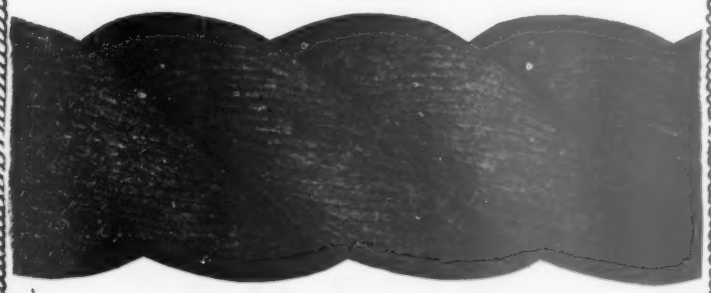


Worthy of Trust

in this area, No. 1 Broderick, is rotating ahead in a hard sand at 4,200 feet.

St. Helens Petroleum finished another producer, No. 11 Monterey, in the Montebello Field but it was a comparatively small pumper making 102 bbls. of 21.2 gravity oil daily from 3,729 feet. The company has three other drillers in this field, No. 12 Monterey at 3,500 feet, No. 3 Mulholland at 3,288 feet, No. 5 Piuma at 3,650 feet and will spud in another shortly on the McDonald lease. Clara Baldwin Stocker will also start work on a new hole within a short time, as a rig is going up for No. 5-A Baldwin. The Standard has just finished drilling No. 1 Harvey at 3,658 feet and it will be bailed for production within a day or two.

Union's No. 1 Olinda, a wildcat in the Fullerton Field, has all the earmarks of a duster at 5,040 feet and No. 2 on the same property at 3,920 feet does not look any better. The resumption of work in the older fields of the state by the major companies has become quite noticeable during the past six or eight months and the Union's drilling operations at Fullerton and Richfield in particular are quite extensive. This company has one or more wells drilling on the Chapman, Coyle, Dorsey, Naranjal, Newell, Stearns, Thompson & Goodwin, Yorba Linda Group and Towell leases. The Shell has just spudded in a new driller on the Stearns lease at Fullerton and its drilling chart carries six drilling projects in that field, three on the Orange lease and one each on the Pico, Stearns and Fisher leases. The General Petroleum has one driller on the Thompson, Stern and Tonner leases but will augment this list in the near future as a new rig is going up on the Thompson property at Richfield and on the Tonner lease at Fullerton.

The Standard's latest spud is No. 22 on Kraemer Lease No. 2 and the starting of this well gives the company three drillers at Richfield, the others being No. 1 Anaheim and No. 21 on Kraemer Lease No. 2. California Petroleum is working on three holes in the Richfield district, Nos. 19 and 20 on the Yarnell lease and No. 11 Richfield Consolidated. The Birch, Brea Canyon and Fullerton Oil companies are busily at work in the Fullerton district each having one driller to its credit. Continental spudded in No. 2 Kraemer at Richfield a few weeks ago and S. H. Keoughan, trustee for the company in California, is pushing work ahead with as little delay as possible.

Midway-Sunset

There were several new wells finished in the Midway-Sunset area during the past week but all were comparatively small pumpers. The Balboa Oil Co. started off with a 100-bbl. well when No. 27 in Section 24-31-23 was put on the beam at 3,643 feet. Honolulu Consolidated's No. 11 in Section 4-32-24, was good for 50 bbls. from 3,556 feet, while the Standard's No. 50 in Section 33-31-24 was a 105-bbl. pumper from 4,125 feet. Obispo Oil Co.'s No. 11 in Section 32-12-23, a location or two removed from its deep sand discovery brought in last year, is looking very good for brown shale production at 3,900 feet and it is possible it will come in under a natural flow at around the 4,000-foot level within three weeks, if no serious water trouble is encountered.

Union Oil Co. is drilling an important well, an offset to the Standard's No. 2 Rass in the Maricopa Flats, this company having resumed drilling where the Lewis Petroleum stopped and abandoned work about two years ago. No. 2 Rass of the Standard is about 1,000 feet deeper than any other Maricopa producer and for this reason the Union's present work is of particular interest, as it will determine whether this brown shale is commercially productive and capable of sustaining a fair production. The completion of a 1,000-bbl. flowing well by the Standard a few weeks ago, due to its being deepened a few hundred feet, gives promise of resulting in considerable work in Section 31-12-23, and also on surrounding property. E. G. Lewis, the Beverly Oil Co. and General Petroleum have already started work as the result of the Standard's success, while the Virginia Oil Co. is hauling in material for a new rig as a southerly offset to the Beverly Oil Co.'s No. 8 Lewis, which is making a little less than 400 bbls. from 1,920 feet.

The Shell has taken No. 1 Vedder off production and this well, which was instrumental in opening up a new field north of Kern River which will probably be designated in the future as the Mount Poso district, will be carried down in search of a deeper sand. Some are inclined to believe the Shell may lose this well through inability to shut off a treacherous bottom water, but the company's geological staff does not share this opinion and is willing to drill ahead in the hope of determining something definite with respect to the potentiality of the field.

New Wells Starting

Several new wells are being started in this vicinity, the Barnsdall having material on ground for a west offset to the Shell's No. 1 Vedder, while the Union has just flagged two locations, one in Section 4-27-28, and the other in Section 5-27-28. J. K. Porter has practically finished a new rig in Section 8, while the Vedder Brothers have just started putting up a derrick in the south half of Section 26. There is considerable play all through this territory extending from Kern River even up beyond Poso Creek, a distance of 8 or 10 miles, and operators anticipate a good deal of drilling during the summer. The Barnsdall is putting the finishing touches on a rig in Section 28-27-27, a few miles west of the discovery well at Mount Poso, while the Superior Oil Co. is rigging up rotary equipment for a test in Section 34.

The Carneros Oil Co., one of the organizations of the Clarence Berry interests, is doing considerable work along the western edge of the Belridge Field. Mr. Berry recently paid $160,000 for 160 acres in Section 31 and his first well finished a few weeks ago was good for 25 bbls. from the 700-foot level. Following this completion, rig construction was started for Nos. 2, 3, 4 and 5 and it is quite likely they will all be on production within 60 or 90 days, as these shallow holes can be drilled in a very short time. The western part of the Belridge Field, which in this respect is similar to that at Lost Hills, has a shallow sand around 700 feet, the producing horizon dipping to the southeast, with the oil coming from about 2,200 feet in many instances. In North Belridge, a mile or so northwest of the main field, production is secured anywhere from 900 feet to 4,000 feet. There is considerable work being done northwest of McKittrick and to the west of Lost Hills and Belridge, in which district the Union and Marland have been drilling for several months.

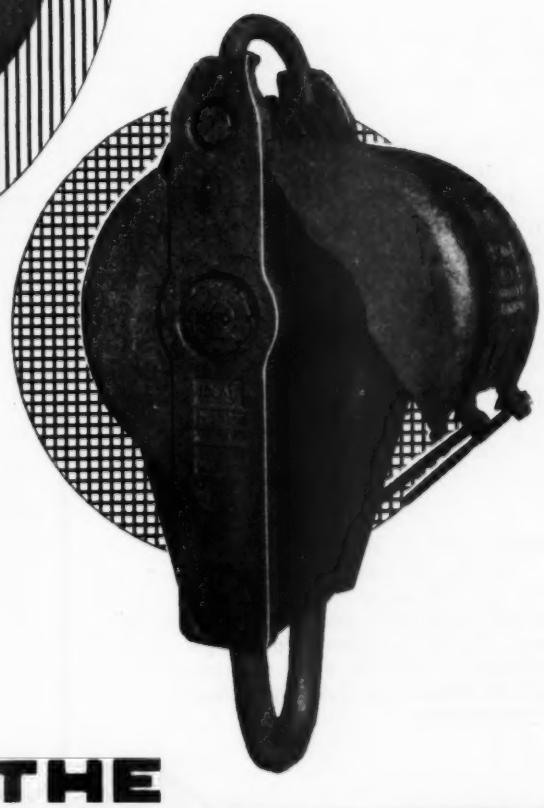
Southern California Wildcats

The Union has just passed the 3,825-foot level in No. 1 Bryant, a wildcat in the northern part of the Seal Beach area, and the logging of an important marker some time ago ranks the hole as an important one. The Marland has cemented a surface string in No. 2 Bixby, south of the Union's test, at 1,400 feet and will probably resume drilling within a few days. The Associated is still working with its structure survey work on the Hellman lease to the east but will probably locate another deep test within a short time if the survey work justifies this action. The Marland filed an abandonment notice on No. 1 Connelly, in the Hyde Park area, at 5,500 feet, a week or so ago and, while it was thought no further work would be undertaken in this vicinity, the action of the Associated in leasing about 500 acres approximately a mile away indicates another test will be started within 90 days. The Marland does not contemplate any further wildcatting but will retain its 1,000-acre lease pending the outcome of the test to be put down by the Associated a little less than a mile west. The latter company is dickering for several more leases before starting work and has, it is understood, submitted a lease to the Potrero Country Club covering 120 acres.

George W. Johnson's second cement job on his wildcat in the Manhattan-Hermosa Beach area was wet and it begins to look as though he will have the same difficulty in shutting off water as other wildcatters in this section have expe-

IDEAL
TRAVELING BLOCKS

Type "C"



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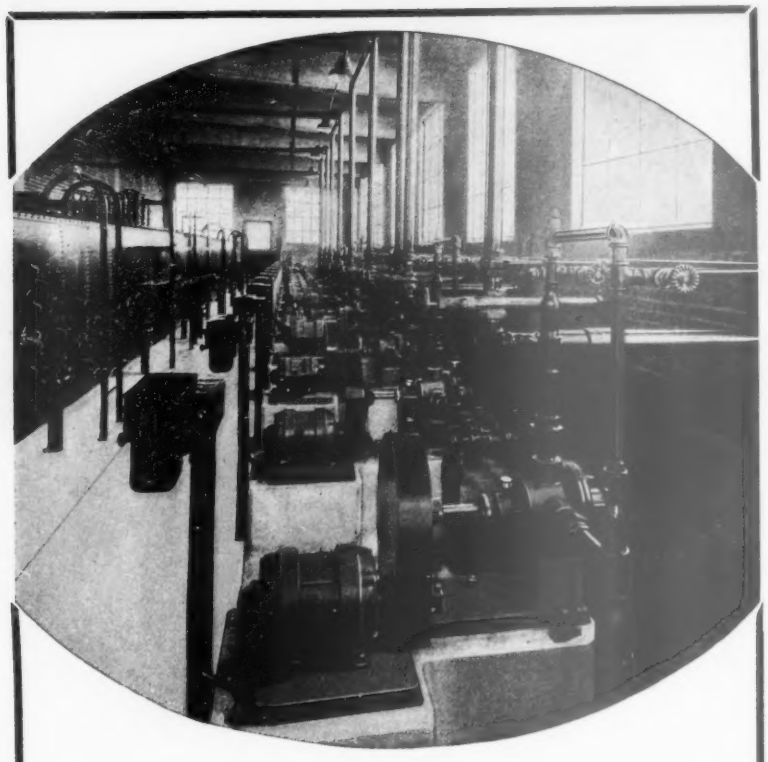

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The cut above shows an installation of thirteen Blackmer Electric Units in a filter plant pump house of a large mid-continent refinery. These pumps are handling paraffin, vasolene, and lube oils at all stages of the process from charging the filter to loading tank cars.

On jobs such as this, where unfailing twenty-four hour a day service is demanded—where the pumping cost per barrel must be kept down to an absolute minimum—where a production schedule must be maintained—Blackmer Rotary Pumps do the job, and do it well.

Investigate these pumps. Send for complete information. There are very definite places in the refining process where the Blackmer Rotary Pump will do a more satisfactory job than any other pump built. Consult our engineering department. Tell us your requirements and we'll be glad to furnish any technical data that you require.

BLACKMER PUMP Co.
Grand Rapids, (Formerly at Petoskey) Michigan
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rienced. H. A. Bardeen has spent several months on the old Manhattan Pacific well without success and it appears useless to expend any further money on the attempt. No. 1 Trust of the Julian Petroleum cored a hard sandy shale at 4,250 feet and, while it is somewhat deeper than the depth at which it should have picked up the showings found in the Johnson well, the company will, nevertheless, continue work. The Umpire Petroleum is still fighting for the privilege of drilling a wildcat in the Alamitos Heights area and, although the Long Beach municipal authorities have so far refused to grant permission to go ahead, the company has hopes of eventually overcoming all objections.

Taken Core Sample

The Union has just taken a core sample in No. 1 Howland, west of the Inglewood Field in Section 24-2-15, and the formation at 1,656 feet was found to be a brown shale. The Marland resumed work some time ago on No. 1 Wickham near the Los Angeles and Ventura County line in Section 32-5-17 following the failure to develop commercial production as a result of the showings found at 2,754 feet, and the bit is being pushed ahead at the present time at 3,201 feet. The Milham Exploration Co. landed a string of 8⅝-inch in its second wildcat at Playa del Rey as a result of a slight showing of oil and gas, but the test at 5,310 feet failed to show anything of importance, due possibly to the fact that a successful water shutoff was not secured. The Standard's two wildcats in southern California at present, No. 1 University in the San Fernando Valley at 1,605 feet and No. 1 Austin in Topango Canyon at 178 feet, will be pushed steadily ahead and, while some geologists have condemned these two locations, the Standard is of opinion the ground warrants prospecting and will accordingly carry each well down for a conclusive test. The Barnsdall's No. 1 Merlo in Section 35-1-11, about 3 miles south of El Monte, has just passed the 900-foot level, the prevailing formation being a hard sand. The Petroleum Securities has just about finished rigging up No. 1 Sesnon in Section 14-2-15 and spud will undoubtedly be made within 10 days.

Northern California Wildcats

The Union made a rather hasty production test of its wildcat, No. 1 Theta, which might really be termed an outpost in Belridge Field, and although it only showed about a barrel of oil from 1,437 feet, work will continue. The Marland stopped drilling on No. 1 Lazard, 3 miles west of the nearest production in the Lost Hills Field, at an even 5,000 feet and will land a protective string of 8¼-inch before going any farther. The Sentinel Oil Co. is making preparations to spud in a new wildcat near Camarillo in Ventura County, where the company has approximately 500 acres under lease. The Gentry Oil Co., drilling about 2 miles west, has just passed the 1,276-foot level, while the Standard will spud in its wildcat about 3 miles to the east some time during the coming week.

The Shell's Ventura County wildcat, No. 1 Berlywood at Moorpark, was checked early this week at 3,910 feet and, although it has not shown anything to date, drilling will, nevertheless, continue, at least until after the 5-foot level has been passed. The Milham Exploration Co.'s No. 1 Sexton, east of the Ventura Avenue Field in Ventura County, has only shown a limited amount of encouragement from the grass roots down to 4,732 feet and operators are inclined to believe this attempt to develop production will prove futile. The Chanslor-Canfield Midway Oil Co.'s No. 1 Hobson, west of the Ventura Avenue Field, is drilling ahead at 4,618 feet and as it has some very good showings, it might be will to watch this test during the next 30 days.

The Shell is rigging up rotary equipment in No. 1 Murphy, just outside of Petaluma in northern California, and spud will probably be made within two weeks. The Associated is evidently not out for any speed record at Huron, as its wildcat at that point is going along rather slowly, the present depth being 2,012 feet in a sandy blue shale. The Bolsa Chica Oil Co. bailed its wildcat in the Kettleman Hills for two days and recovered about 50 bbls. of oil during this period. This wildcat is down 2,038 feet and although the result of the bailing test is quite promising, it has not yet been determined whether the hole will sustain steady production because it has not yet been put on an exhaustive pumping test. The Marland's wildcat, also in the Kettleman Hills but located a considerable distance from the Bolsa Chica's well, is being delayed with mechanical trouble at 5,570 feet. The abandonment several weeks ago of a wildcat by the Chanslor-Canfield Midway Oil Co. near Delano will probably result in the drilling of another test some distance away from the initial well, either by this concern or the Sentinel Oil Co., each of which has somewhere around 5,000 acres under lease.

CANADIAN FIELDS

(Continued from Page 44)

It is planned to deliver the production to the Canadian Western Natural Gas Co.'s pipelines.

O. D. Devenish and associates of the Devenish Oil & Gas Syndicate of Calgary have blanketed 80,000 acres of leases in southeastern Alberta, preparatory to extensive development. The filing was in two blocks of 60,000 and 20,000 acres, on two structures near the head of Etzikom Coulee, in Townships 14 and 15, Ranges 4 and 6 west of the Fourth Meridian. The filings cover an area lying generally between the town of Skiff and the village of Lucky Strike, beginning about 10 miles southwest of Foremost and some 6 miles south of Skiff. The structure examined by Dr. J. A. Allan, head of the University of Alberta geological department, shows a main anticlinal structure and a subsidiary parallel dome, the dip running from 18 to 35 feet to the mile, with the strike in a general northwest to southeast direction. Possible oil horizons are around 4,000 feet. The Devenish syndicate is securing a heavy drilling outfit for the test, which will spud in about July 15.

Bow Island Deep Test

In the Bow Island Field, Imperial Oil, Ltd., has camp buildings complete and equipment on the ground for its deep test for oil.

On the Montana side, Monalta-Johnson No. 1, Section 3-37-4w, close to Sweetgrass, is down 2,400 feet and drilling, with a slight show of oil around 2,350 feet. Casing has been run to 1,925 feet, shutting off a wet gas flow met at 1,580 feet. Aerolite Oil Co., organized by Wayne, Drumheller and Calgary men, with $1,000,000 capitalization and head office at Calgary, will drill in the Devil's Basin Field in southern Montana, having taken over from Jesse Gouge and associates a producing well 1,200 feet deep, on the former Alberta Block Coal Co. lease. This well will be cleaned out and No. 2 spudded in, Charles Boucher of Wayne being field manager. Officers of the company include: President, John Blair, Wayne; field manager, Charles Boucher, Wayne; directors, Thomas O'Donnell, Rosedale; D. V. Robertson, Calgary; Thomas Boucher, Wayne; M. J. White, Calgary; N. J. Vickers, Drumheller; Simon Cameron, Drumheller.

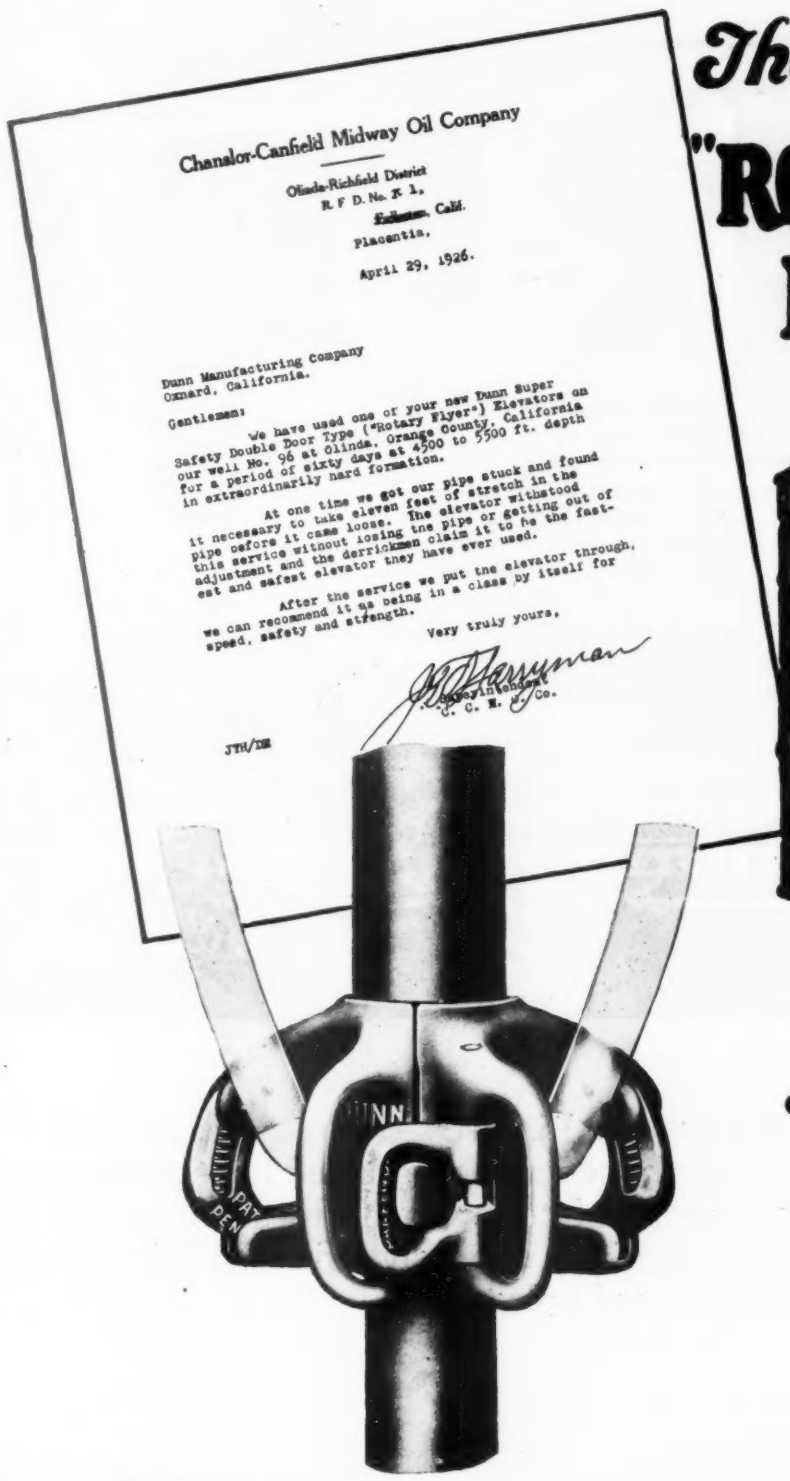
Ellis Oil Co., organized some time ago under Dominion charter with head office at Calgary, and which has two producing wells in Montana, will drill six additional wells in that field, after which a test will be drilled on the N half S half LSD 3, Section 24-20-3w5, in the Turner Valley Field. Officers of the company are: President, Robert Wilkinson, Calgary; vice president, O. S. Chapin, Calgary; manager, J. E. McGinniss, Calgary; directors, A. A. Dick, A. G. Spooner, Calgary; R. A. Wildeman, Blackie; L. A. Newman, Gladys; D. W. Craig, Kevin, Mont.

In the Quarantine reserve area, near Coutts, Alberta, Urban Oils, Ltd., Section 4-1-15w4, is reported drilling around

[DUNN TOOLAGRAM]

TOUGH WORK doesn't bother

The DUNN "ROTARY FLYER" ELEVATOR


Chanslor-Canfield Midway Oil Company

Olinda-Richfield District
R. F. D. No. 1,
Fullerton, Calif.
Placentia,
April 29, 1926.

Dunn Manufacturing Company
Oxnard, California.

Gentlemen:

We have used one of your new Dunn Super Safety Double Door Type ("Rotary Flyer") Elevators on our well No. 96 at Olinda, Orange County, California for a period of sixty days at 4500 to 5500 ft. depth in extraordinarily hard formation.

At one time we got our pipe stuck and found it necessary to take eleven feet of stretch in the pipe before it came loose. The elevator withstood this service without losing the pipe or getting out of adjustment and the derrickmen claim it to be the fastest and safest elevator they have ever used.

After the service we put the elevator through, we can recommend it as being in a class by itself for speed, safety and strength.

Very truly yours,

J. T. Harriman
Superintendent
C. C. M. Oil Co.

JTH/DE

Dunn "Rotary Flyer" Elevators are built for tough work; they have encountered many conditions so tough that other elevators have been "knocked out" of the rig, yet the Dunn came out unscarred, ready for the next fight.

Dunn Elevators Lock
The Load and Hold It

The Dunn Group of Elevators includes a type for every requirement. Special folder sent on request.

DUNN MFG. CO.
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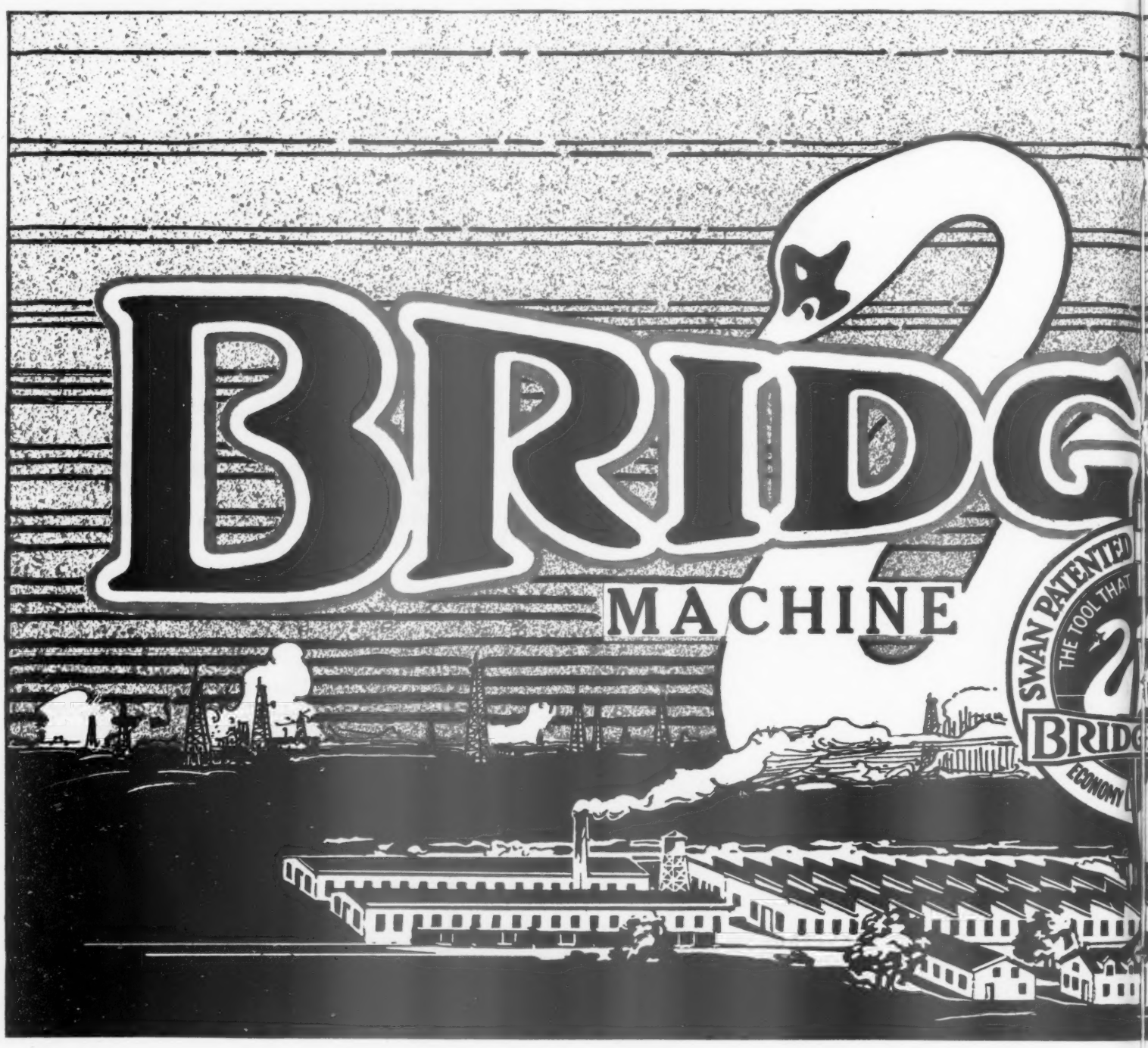
DUNN SAFETY *means* DONE SAFELY



With the new and improved tools, which have been strengthened and toughened for the more rigorous work of today, operators are better protected against expensive fishing jobs or abandonment of holes.

Heat Tre
BRIDG
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XUM

Drilling is becoming a science. Men work with surety—and the greatest of all assurance is found in Bridgeport Heat-Treated Field-Proven Tools.

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Murray Jars

The following are some of the main features of our drilling jars:

They are made of the highest grade material obtainable;

They are from ten to twenty per cent heavier than ordinary jars;

There is an average of sixty per cent more wearing surface on the knocking head than in the ordinary jar;

The care that is used in forging gives entire freedom to the moving parts without being sloppy;

They are forged in control furnaces at the correct forging temperature;

They are scientifically heat treated, which gives equalization of working strain—freedom from internal stresses and correct hardness for long life.

The jar resulting from the above methods and material is a jar that is hard where hardness counts, still having great flexibility and also protects the joints of the other tools in the string and also gives great service.

Murray Tool & Supply COMPANY
TULSA, OKLA.

2,900 feet in an exceedingly hard formation and making hole very slowly.

It is reported that the Dreamfield Oil Co. of Medicine Hat is arranging to resume work on its unfinished test in Section 2-33-11w4, in the Lucky Strike district. The company was organized some 10 years ago by Thomas J. Jamieson, now of Melita, Manitoba, the location being, according to Mr. Jamieson's story, shown him in a dream. A light rig was used and a test carried to approximately 1,000 feet, no commercial results being secured though oil showings were claimed The test was not carried to conclusive depth.

It is reported that the Canadian Oil & Refining Co. of Lethbridge, Alta., is being organized and refinanced with a view to building a pipeline from the Rogers-Imperial gasser in Section 29-1-11w4 to Great Falls, Mont. The Rogers-Imperial well has a large dry gas production, estimated around 50,000,000 feet open flow, and it is understood permission has been secured to export the production so long as it is not needed in Alberta.

Turner Valley Field

In the Turner Valley Field, Vulcan Oils, Ltd., LSD 11, Section 13-20-3w5, after making repairs to the bull wheel has resumed drilling at 4,810 feet. The 6-inch casing has been run to the bottom of the hole, and the bit after working through a stratum of soft black shales is in a very hard formation. McLeod Oil Co. No. 2, LSD 16, Section 1-20-3w5, has finished cementing casing and resumed drilling at 3,661 feet. The 6-inch casing was set on the limestone. Illinois-Alberta Oil & Refining Co. No. 1, LSD 14, Section 12-20-3w5, has finished underreaming and resumed drilling at 3,636 feet. It is reported that Dalhousie No. 1, LSD 4, Section 18-20-2w5, will use a 6-inch rotary drill to complete the well, now down 3,546 feet. The well has been blowing light oil by heads, but is being bailed preparatory to cementing. Dalhousie No. 5, LSD 16, Section 30-19-2w5, is reported down 40 feet and drilling.

Great West Oil Co. No. 1, SE, Section 7-20-2w5, is reported drilling in the top of the Dakota sand at 2,040 feet, which was 200 feet higher than expected. The Benton formation is slightly deeper than in Royalite No. 4. The 12-inch casing has been lowered to the bottom of the hole. Advance Oil Co. No. 2, LSD 14, Section 20-19-2w5, has run and cemented in the 24-inch casing to shut off the water encountered at 70 feet and resumed drilling. Advance No. 1, same section, at 3,200 feet is lifting the 8-inch casing.

Home Oil Co., LSD 10, Section 2-19-2w5, is drilling at 500 feet after encountering additional water. Chris Bennetsen and Charles Nolan are in charge of the drilling. Dallas Oil Co.'s No. 1, LSD 11, Section 20-19-2w5, has carried 12½-inch casing to 1,500 feet and resumed drilling. The 12½-inch casing will be carried down to 2,100 feet.

Anaconda Oils., Ltd., will drill in LSD 13, Section 20-19-2w5, south of Dalhousie No. 5. Titan Oil Co. has a location in LSD 2, Section 18-20-2w5, north and a little east of Royalite No. 4. Duluth, Minn., capital is interested in both these companies. Calmont Oils, Ltd., No. 1, LSD 2, Section 1-20-3w5, has the derrick up and equipment in place, and is waiting for a boiler.

Other Operations

Highland Oils, Ltd., LSD 5, Section 5-20-2w5, is down about 70 feet with a 24-inch hole, after getting past some difficult boulders. A spiral stem is being used in this test. Drilling is in charge of W. P. McCullough, and C. Bonner. New McDougall Segur Oil Co., NW, Section 12-20-3w5, is rigged up ready to spud in. Hylo Oils, Ltd., is starting preparatory work on a location in LSD 13, Section 20-19-2w5, in the southern end of the Turner Valley. Cooper-Nanton Oils, No. 1, LSD 2, Section 7-20-2w5, has a derrick up and equipment on the ground. New Valley Oil Co., LSD 4, Section 6-21-2w5, has a derrick up and is installing machinery. New Black Diamond Oil Co. No. 1, LSD 1, Section 3-20-3w5, has a standard outfit rigged up ready to spud in. British Dominion Oil Co. No. 1, LSD 4, Section 5-20-2w5, about 500 feet northeast of Royalite No. 6, spudded in last week.

Los Angeles interests represented by E. F. Cobb are reported to be negotiating with a number of companies operating in the Turner Valley Field for the construction of a refinery to handle their production.

Royalite Oil Co. No. 5, LSD 13, Section 7-20-2w5, is reported at 3,148 feet and drilling. Royalite No. 6, LSD 16, Section 31-19-2w5, has resumed drilling at 2,854 feet.

In the Jumping Pound district, 25 miles west of Calgary. Imperial Oil, Ltd., Bow River No. 1 is down to 2,432 feet and the 12½-inch casing has been run to the bottom. The crew is now repairing the rig and putting in a new sand reel.

In the Willow Creek Field, west of Nanton, Imperial Oil, Ltd., Rice Creek test, Section 4-14-2w5, is down 4,430 feet and the crew are preparing to run 6¼-inch casing. In the Border Field, east of Coutts, Imperial Oil, Ltd., Erickson Coulee test, LSD 13, Section 8-1-12w4, is down 1,965 feet and drilling. In the Foremost-Bow Island area, the derrick for Imperial Oil, Ltd., Burdett No. 1 is being erected.

Imperial Oil, Ltd., will drill a test on the Highwood Petroleum & Natural Gas Co. holdings along the Highwood River, south of the Turner Valley Field. A location has been made in LSD 3, Section 36-18-3w5, and work has been commenced on the camp. Imperial Oil, Ltd., is reported to be considering a test on the Ribstone-Blackfoot structure in eastern Alberta, but no location has yet been made.

In the Turner Valley Field, Devonian Oil Co. has spotted a test in LSD 2, Section 24-20-3w5. Spooner Oils, Ltd., No. 1, Section 13-20-3w5, is working on derrick.

On the Sinclair structure near Pekisko, six tests will probably be drilled this summer. Banner Oils, Ltd., has tentative locations, one of which will be tested, in Sections 34 and 35, Township 17-3w5, 4 miles north of Pekisko. The old Calgary-Alberta well, drilled at the time of the 1914 boom and which got a fair shallow oil showing, is in Section 34 and geologists claim that at this point the drill will get the top of the Madison lime around 2,000 feet. Jewel Oil Co., which has been organized in part out of shareholders of the old Calgary-Alberta Oil Co., has spotted a test in LSD 6, Section 34-17-3w5. The company owns the old Calgary-Alberta locations. Wabash Oils, Ltd., will drill on Section 10-18-3w5 or Section 33-17-3w5. The Wade Valley Syndicate, headed by O. A. Mabee of Calgary, has 19,500 acres in Townships 20 and 21, Range 4w5 and 3,500 acres in Townships 17 and 18 Range 3w5. Standard outfits with spiral stems will be used for the drilling.

Slave Lake Area

In northern Alberta, in the Lesser Slave Lake area, International Oils, Inc., Section 14-74-4w5, is drilling, the test starting with a 17-inch hole. The start, planned for May, was delayed owing to wet weather.

In the Peace River Field, Western Provinces Oil Co. has resumed work on the Victory well, Section 32-83-21w5, opposite Peace River town. The water will be shut off after which an effort will be made to reach the lower sands.

In the Athabaska tar sand district, a Calgary syndicate has sent a crew to McMurray to begin work on a project for separating crude oil from the tar sands. A steam separation process will be used, tests of the process on an experimental scale having proved satisfactory.

In the Moose Mountain Field, Reserve Oil Co., drilling on the Morley Indian Reserve, is down 600 feet with a 3-inch diamond drill hole. In the Aldersyde district, south of Calgary, the Ranchmen's Oil & Gas Co. has commenced

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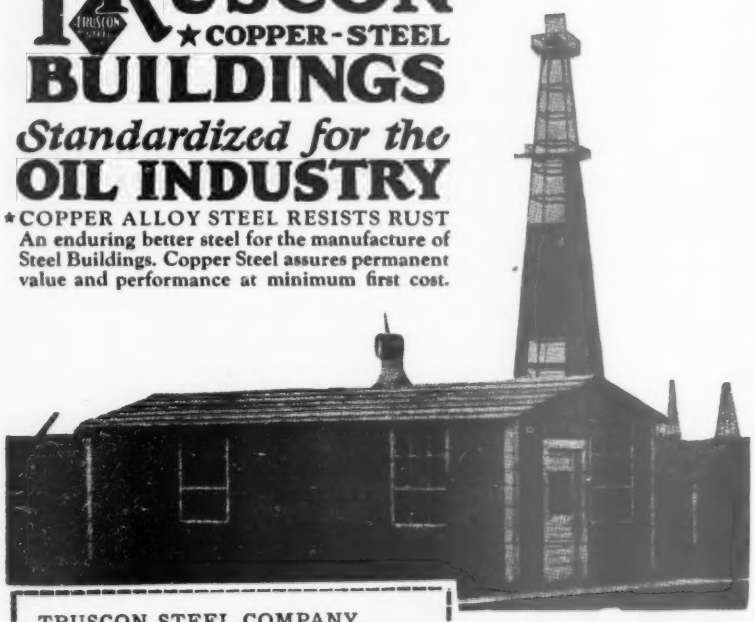

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work on its test in LSD 16, Section 13-20-29w4, and is working on derrick.

Stockholders of the Federal Oil & Gas Corp., which operated at the time of the Calgary boom, are making an effort to reorganize the company.

In the province of Saskatchewan, the Unity Valley Oil Co., SE, Section 23-41-24w3, has a rig up ready to spud in. A combination rotary and cable outfit is being used for this test.

In the Ontario fields, the Colchester Oil & Gas Co. deep test in Zone Township, Kent County, north of Thamesville, is pulling casing and plugging the hole. Union Natural Gas Co. is reported starting a new test for gas in Dawn Township, Lambton County. In Essex County, Bon Jasperson is finishing a gasser near Kingsville, east of his previous producing wells.

BRADLEY POOL, ARK., SHOWS UNUSUAL SAND

(Continued from Page 50)

pleted as a producer and the test was abandoned at 2,795 feet.

Next in line was No. 3 on the Red River Lumber Co. lease and in the SE cor. Section 7-19-24. It is little more than a mile northeast of the discovery well and was about 18 to 20 feet low. No. 3 was abandoned at 2,825 feet the latter part of April. About the same time No. 2 Red River, SE SW SE, Section 18-19-24, was drilled and went the same route as No. 2 Allen. After making a show of oil and too much salt water it was abandoned at 2,811 feet.

The most recent failure was a direct west offset to No. 1 Red River and made the area a greater riddle. It was No. 4 Red River, SW SE NW, Section 18, which had the top of the Blossom at 2,788 feet without a trace of oil. A few feet deeper salt water was encountered. The hole was bored on down to 3,069 feet and then abandoned. The last few feet of formations were cored several times without either oil or water showing.

Sand Conditions

Preceding the completion of No. 4 Red River by a few days, No. 3 on the Allen lease was completed for an oil well. It is in the NE SW Section 18 and was finished at 2,782 feet. The well is now making 152 bbls. of oil and a batch of salt water on the pump.

Those following the development around Bradley attribute the failures in Sections 18 and 19 to sand conditions rather than structural conditions. The Blossom sand there is about 16 feet in thickness. In all of the failures the first two or three feet of sand was found to be very hard and closely cemented. It gradually softened and went into salt water. In the producing wells the sand apparently was saturated the first few feet and more porous than the sand in the failures.

Interest in the area now is centered about the Arkansas' next test and the Gulf Refining Co.'s test. The Arkansas' will be No. 4 Allen, CEL SW, Section 18, and in the middle of production row. The Gulf's wildcat is No. 1-E Red River, CSL SW, Section 10-19-24, which is drilling for the Blossom.

ARTESIA, NEW MEXICO

(Continued from Page 52)

drilling below 1,000 feet; Decum Development Co.'s No. 1 Vandagriff Permit, in the NE cor. SE, Section 5-17-28, drilling 2,115 feet, has 2,000 feet of water in hole; Empire Gas & Fuel Co.'s No. 1, in SE cor. SW SW, Section 35-17-27, drilling 1,500 feet; Flynn-Welch-Yates' No. 45, in NE SE, Section 21-18-28, cleaning out after shot; No. 4 Keyes in the NW cor. Section 21-18-28, drilling below 1,700 feet; No. 46, 600 feet east of No. 13, in Section 28-18-28, drilling below 2,050 feet; No. 47, 600 feet north of No. 32 in Section 28-18-28, drilling in and swabbing; No. 48, 600 feet west of No. 12, in Section 21-18-28, drilling at 900 feet; H. F. Hall and others' No. 1, location in Section 27-17-31; Hasenfuss & Donley's No. 2 in the NW cor. NE NE, Section 13-18-27, drilling at 1,600 feet; Rehon & Harris' No. 1 Winans in NW NE, Section 15-18-26, shut down at 752 feet cementing casing; Hamilton Petroleum Co.'s No. 1 Billings, in Section 12-19-26, drilling below 500 feet; Henderson-Dexter-Blair's No. 1, in NW cor. Section 9-19-28, location; Ohio Oil Co.'s No. 2 New States, in the SW SE, Section 8-18-28, drilling below 200 feet; No. 9 New States in the SE SW SE, Section 4-18-28, on production; Picher Oil & Gas Corp.'s No. 3 Cronin Permit, in the SE of Section 12-18-27, drilling in below 1,900 feet; Swartz-Compton-Eaton's No. 1 Brainard Permit, in the NE cor. SW, Section 5-18-27, shut down 1,595 feet; Sun Oil Co.'s No. 1, Section 21-25-30, ready to spud; Skelly Oil Co.'s No. 1 Bu'ah V. Lynch Permit, in the NE cor. Section 22-17-31, building steel derrick and road to location, will spud by June 20; Twin Lake Oil Co.'s No. 8, Section 28-18-28, fishing for 6-inch bit at 2,612 feet; The Texas Company's No. 5 in the NW NE NE, Section 8-18-28, claining out after shot; The Texas Company's No. 5 Bobb Permit, in Section 17-17-28, shut down at 2,500 feet; Wade & Bujac's No. 1 Goodale Permit, in the NW NW, Section 18-18-29, drilling below 2,000 feet; Wooley & Jones' No. 1 Beeson, setting 8-inch casing at 2,400 feet.

Chaves County

Colorado Gas & Fuel Co.'s No. 1, in the NW SW, Section 16 8-27, shut down; D. C. De Vito and others' No. 1 in the SW, Section 24-11-26, drilling; Dunn and others' No. 1 in Section 8-11-23, shut down at 360 feet; Rogers and others' No. 1 in the NE, Section 15-11-26, shut down; The Texas Company's No. 1 Dunken Dome, SW, Section 29-17-28, no report.

Lea County

J. S. Covert No. 1, Section 15-21-33, shut down at 800 feet repairing bull wheels; Inglefield and others' No. 1, Section 4-17-34, driving casing to shut off quicksand; Maljamar Oil & Gas Corp.'s No. 1 Simon Permit, SW cor. Section 29-17-32, validation hole completed; Maljamar's No. 1 Baish, NE, Section 21-17-32, shut down at 4,085 feet, making 50 bbls; Maljamar's No. 1 Grace Mitchell Permitt, SW cor. Section 5-17-32, standard rig completed; Maljamar's No. 1, Beardsley Permit, NE cor. Section 15-17-32, validation hole completed; Maljamar's No. 1 Pearsall Permit, NE cor. Section 33-17-32, awaiting tools; Maljamar's No. 1, McDonald & Jewett Permit, SE NW, Section 13-18-32, drilling below 175 feet; Maljamar's No. 1 Walker Permit, SW cor. NW, Section 5-18-32, drilling below 300 feet; Maljamar's No. 1, Stroup Permit, SE cor. SE, Section 1-18 32, drilling below 180 feet; Maljamar's No. 1 William Mitchell, SW cor. Section 17-17-32, validation hole complete; Maljamar's No. 1, Miller Permit, NW, Section 23-17-32, validating hole; Ross' No. 1 test, Section 27-10-32, plugged and abandoned.

SOUTHWEST TEXAS

(Continued from Page 56)

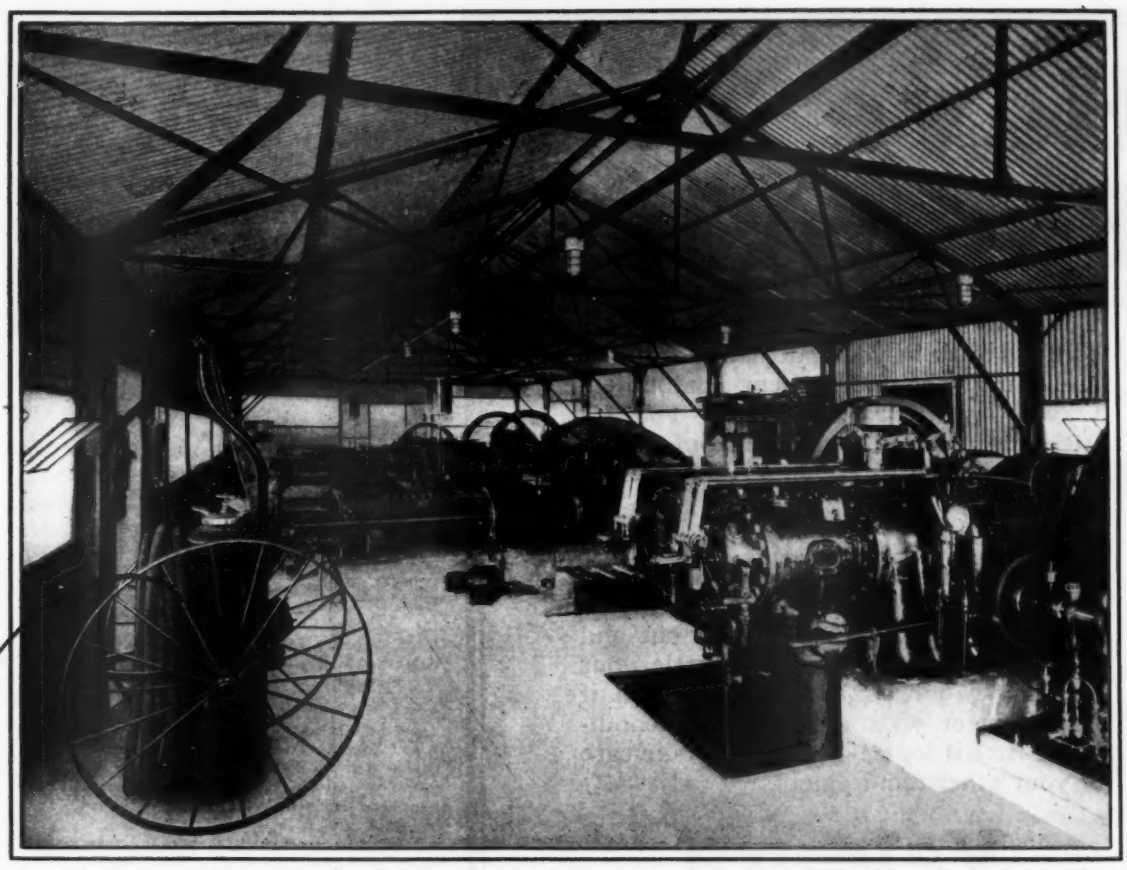
which was abandoned at around 3,000 feet.

LaSalle County

DeLange, Eiser Development Co. has reset the 12½-inch casing at 482 feet in No. 1 Dobie (fee) in the southeast corner of LaSalle County, and will drill in and test a shallow gas showing the first of this week. It is thought the gas will be more than sufficient to fire the boiler in drilling a deep test.

Live Oak County

George B. Pickett's No. 3 George West, is drilling at 1,305 feet near the town of Kitty in Live Oak County. W. J. Walton has completed No. 2 Odom, 1 mile west of Three Rivers in Live Oak County, at approximately 800 feet, making a small gas well. Henderson Coquat, who has been operating in the Live Oak territory, has organized the Simmons Oil Co., and is drilling at 1,300 feet in No.



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2 Sartain, in the Simmons tracts, a little west of Three Rivers.

Medina County

Major interests are beginning to take an interest in Medina County and the dozen or more tests going down, some with little light rigs, are so many formation tests that are helping to work out the structural conditions of the county. The geology of Medina County has rather upset the industry and there has been sharp division of opinion as to whether or not there is any oil in Medina County, but of late the conviction is growing that there is likely to be some Edwards lime production in the county.

Tarver & Sprague (formerly Eastham & Tarver) are working with their well on the Howard farm in Survey 91, 2 miles east of the three Adams wells and while they have got some little showings of oil have not made a well. The core looked fine. Total depth is 1,127 feet and 200 feet of perforated liner with half-inch holes was set. Shale from above seems to be getting into the liner. There was 8 feet of the oil sand. The well is being washed. It should respond and make a well. The liner may have to be pulled and the casing set lower. Henderson & Holden, on the Adams tract, have made the location for their fourth well, the location being 1,600 feet south of No. 2 Adams, which was a 13,000,000-foot gasser at a depth of 905 feet.

South of Hondo

In the territory 4 miles south of Hondo where Medina Oil Co. some months ago got a well at 356 feet that started off pumping 100 bbls. a day, No. 5 Medina has been completed 300 feet southwest of No. 1, and it is claimed at 351 feet it will make a good well, though far from being as big as the first. Direct offsets on each of the four sides were drilled and only two were producers and they very small. L. Smith has abandoned at 200 feet his No. 1 Nixon on Survey 531, 3 miles west of the Ina Field. Arnett Oil Co. is drilling No. 4 Nixon, 300 feet south of No. 1. Golden West has completed its No. 5 Schmidt in the Ina Field and it is on the pump. Golden West's No. 6 Schmidt, 300 feet west of No. 5, is starting to rig up. Medina Oil Co.'s No. 1 Haglan is shut down at 700 feet. Al Buchanan is fishing at 346 feet in No. 1 Odom, northwest of No. 1 Taylor, of the Medina Oil Co. North & South, with a 112-foot derrick, is rigged up and expected to get spudded in for an Edwards lime test, a little north of the Medina Oil Co.'s No. 1 Taylor.

Test for Serpentine

Alamo Drilling & Leasing Co. is down nearly to completion depth in its No. 1 Graff, 2 miles north of the Ina Field, which is to test for a Serpentine bed at about 1,100 feet. Ina Oil Co.'s No. 1 Hoffman, on Survey 535, had a showing of gas at 1,510 feet. Ina's test on the Finger tract, in the western part of the county, is drilling at 400 feet. Schermerhorn Oil Co. is drilling two new wells on the Medina Irrigation Co. land, southeast of Noonan in eastern Medina County, and has set casing on No. 2 at 782 feet and will drill in this week. No. 1 is pumping 2 bbls. from the same depth. It is a new field and they are in hopes they will be able to pick up some bigger production. Oil is 31 gravity. J. R. McCaldin is drilling at 1,950 feet in Anacacho lime in No. 1 Thompson, 2 miles west of Devine and expecting soon to encounter the Austin chalk. Cecil Switzer is drilling below 1,700 feet in the Glenrose in a test on the Zerr tract northeast of D'Hanis. Gibson Oil Corp. is changing to larger rig on two of its tests in Medina that were reported abandoned. No. 1 Carpenter at 1,340 feet, on Survey 808, a few miles southwest of the Ina Field and No. 1 Aten (Saathoff) on Survey 847, a few miles south of D'Hanis in western Medina County, at 530 feet, are each installing big rigs and will go to the Edwards lime. Golden West Oil Corp.'s No. 1 Joseph Courand, a wildcat test, southwest of Castorville, is drilling at 250 feet. H. W. Ward, with derrick up and machinery on the ground is changing the location of the wildcat he is to drill northwest of Castroville. The new location will be on Survey 129.

McMullen County

T. H. Poole's (Sights and others) No. 1 Franklin, in northern McMullen County, has a good gas showing at around 1,900 feet and will test. George M. Ball is drilling at 500 feet in his No. 1 Kuykendall, west of Tilden.

Starr County

Ramsey-Maxey Oil Co. is drilling at 500 feet in No. 1 Kelsey in Starr County north of Rio Grande City.

Val Verde County

Plateau Oil Co. is drilling at 2,285 feet in No. 1 Harrison in Val Verde County east of Del Rio, in which General Petroleum of California has a half interest. The well has its first water which came to within 200 feet of the top. It will be drilled a little deeper expecting to pick up another water sand and will then case the water off.

Wilson County

Grayburg Oil Co. is drilling at below 1,850 feet in its test in Wilson County on the Irwin farm. Humble Oil & Refining Co. has leased a block in Wilson County, 7 miles northeast of Floresville and has the derrick up and is moving in for a test on the D. A. Sellers farm, the location being 330 feet from the east and 950 feet from the south line and in the Joseph Reynolds survey. Gibson Oil Corp. has completed a water well and is ready to start drilling on No. 1 Julius Espey, a little northwest of Floresville, in the Arocha grant, and a quarter of a mile south of the center of the north line of the Espey land. Pat Armstrong, who is drilling the Rosalie well in northeastern Wilson County, is waiting on 3-inch drill stem at 2,100 feet.

Zapata County

O. W. Killam is drilling at 1,560 feet in his No. 1 Hinnant, on Survey 307, Block 41, in Zapata County. Location is made for No. 2 Hinnant in the same survey. Maurer & Duggan are drilling at 1,450 feet in their No. 2 Cuellar in Survey 243. Magnolia Petroleum Co. is drilling at 200 feet in No. 2 Cuellar, in Survey 278. The Texas Company is drilling at 4,415 feet in No. 2 Jennings, southwest of the old Mirando Valley Pool.

Zavala County

Old Dominion is pulling casing and will plug and abandon No. 1 Pryor in Zavala County at 3,635 feet. Continental Oil Co.'s No. 1 Pryor has completed the contract depth to 3,503 feet and is in the top of the Glenrose with a strong flow of sulphur water but has not reached the sand supposed to be in the upper Glenrose and will deepen 300 feet or more till this sand is picked up.

KELLEHER BECOMES AN INDEPENDENT OPERATOR

WICHITA FALLS, Tex., June 19.—Fred M. Kelleher has resigned his position in the land and leasing department of The Texas Company and will enter the ranks as an independent operator.

Mr. Kelleher, who is probably one of the most widely known men in the oil business, having been identified with the industry in its various branches in the Pennsylvania, Ohio, Kentucky and Oklahoma fields for 40 years, came to Texas about 14 years ago from the latter state, where he had charge of the company's telegraph and telephone departments.

With his arrival in north Texas Mr. Kelleher confined his activities to the leasing end and in his tenure of 14 years purchased many millions of dollars worth of leases for his company, many of his purchases being numbered among The Texas Company's biggest assets.

NEW PANHANDLE COMPANIES

OKLAHOMA CITY, Okla., June 19.—Three more new oil corporations were added recently to the rapidly growing list in the Texas Panhandle. They were the Golden Eagle Oil Corp., capital $200,000; Riverside Oil Co., capital $100,000, and Donald Oil Co., capital $120,000. Headquarters of each is in Amarillo.

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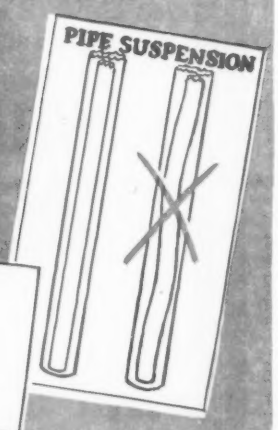

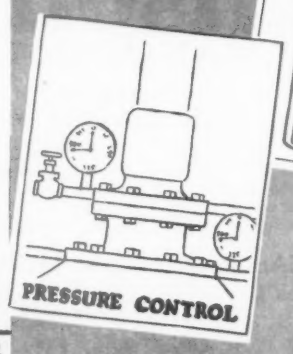

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FUTURE POSSIBILITIES OF CENTRAL WEST FIELD

(Continued from Page 76)

(b) Sandstone, impure, arkosic in upper portion. Garnet, orthoclase, microcline, and plagioclase are plentiful. Usual diameter of grain 0.3 to 0.5 mm. Samples from the Norris well show a white sand of angular grain that drilled fine, indicating a quartzite	2,360-2,755	395
(a) Clay, top portion red, middle green, and base gray	2,755-2,770	15
Pre-Cambrian: Granite, probably gneissoid. Biotite and green hornblende principal accessory minerals, with a considerable amount of titanite and apatite and a lesser amount of garnet	2,770-2,980	..

Deep Well at Waverly

A deep well drilled at Waverly in southern Ohio is of interest in this connection, and a condensed section with major headings omitted is given for comparison. The record was studied by R. S. Bassler, whose description appears in Volume XXXI of The American Journal of Science, pages 19-24.

Geologic Section of the Waverly Well

	Thickness in feet	Depth
Fine grained drab sandstone, forming lower part of Wavely series	35	0- 35
Bituminous, fissile black Ohio shale	450	35- 485
Mainly white, fine-grained sandstone with traces of white limestone. Red and brown calcareous sandstones of Clinton Age in basal portion	415	485- 900
Blue shale and fragments of blue limestone, Richmond and Maysville Age, with probably upper Eden shales represented	1,065	900-1,965
Blue shales containing Middle Eden fossils	55	1,965-2,020
Unfossiliferous blue and greenish shale, probably lower Eden and Utica	80	2,020-2,100
Blue clay and shale with a few fragments of blue limestone. Lower Trenton fossils noted	125	2,100-2,225
White, clayey and dove-colored unfossiliferous limestones and blue argillaceous limestone at bottom (Lowville and Stone River)	600	2,225-2,825
White, saccharoidal sandstone (St. Peter)	175	2,825-3,000
White, dolomitic limestone. Fragments of igneous rock at base	320	3,000-3,320

The Oxford Test

The following section is regarded by Doctor Bassler as representative of the region near Cincinnati. It was taken from a well drilled at Oxford, described by Joseph F. James in Volume X of The Journal of the Cincinnati Society of Natural History. The correlations are inserted in brackets by Bassler in the article cited, and the original classification of James is omitted.

Geologic Section of Well at Oxford, Ohio*

	Feet
Blue limestone and shale (Richmond and Maysville)	360
Blue shale (Maysville and Eden)	380
Dark limestone (Trenton)	50
White limestone with magnesia (Lowville and Stone River)	495
White, arenaceous limestone (St. Peter)	40

It is pointed out by Doctor Bassler that the Maysville and Richmond do not vary greatly in thickness across the Cincinnati arch, but that the great variation in thickness of the Cincinnatian series is probably due to an increasing thickness of Utica shale away from the apex of the axis.

"There is nothing in the Findlay well records which proves the presence of the Point Pleasant formation as developed in southern Ohio, which contains a Trenton fauna. The oil-bearing limestone underlying the Utica (?) shale and popularly known as the Trenton, may be the equivalent of the Galena limestone which is of early Trenton age. The rock is a brown, crystalline, open-textured dolomite with numerous voids. These are lined with dolomite crystals and marcasite, which appears to be the latest mineral introduced. This open-textured oil- and water-bearing dolomite has a thickness of 68 feet. Beneath it is a dense dark gray limestone having numerous fossils. A diminutive variety of Dalmanella testidineria is especially significant, and Black River is indicated at the probable age of the beds.

The drillers report sharp sands which cut the drill, at depths of 85 and 180 feet below the top of the 'Trenton,' but an examination of the samples showed but little quartz within those limits. The limestones of Black River age has some shale beds. The limestones considered to be of Stone River age are more or less argillaceous and even textured, and vary from light dove color to nearly black. They appear to be devoid of fossils. There is some shaly limestone in the lower portion.

"The white granular limestone immediately under the limestone last described occupies the position usually assigned to the top of the St. Peter. The samples from the upper portion contain little quartz and the first sandstone bed penetrated lies 150 feet lower. The succeeding 190 feet consist of alternating layers of siliceous limestone and white sandstone, with a thin layer of clay near the base. This gives the unusual thickness of 406 feet for the St. Peter.

Some Showing at 1,900 Feet

"Some oil was found in the Norris well in the interval ranging from 1,900 to 1,960 feet in depth. This may come from the lowest bed tentatively assigned to the Stones River, but it seems more probable that the horizon belongs in the St. Peter. No oil was reported at this horizon in the Grubb well. The "Blue Lick" water, a bitter characteristic of the St. Peter, was found about 300 feet lower than the oil.

"There is little doubt that the dark dolomitic limestone found at 2,300 feet is upper Cambrian. No recognizable fossils were discovered but the rock has an abundance of glauconite. The underlying sandstone having a thickness of 395 feet rests on pre-Cambrian rock.

Granite (?) Penetrated 210 Feet

"The pre-Cambrian rock was penetrated to a depth of 210 feet. The water from the overlying sandstone was cased off, and it was necessary to pour in water to facilitate drilling. Progress was slow in the hard rock which played havoc with the drill. The bailer was run four times each day giving samples at intervals of three or four feet, which were painstakingly washed by the driller thus losing all the mineral powder. No rock particles were obtained.

"The samples, 55 in number, are fairly uniform as to mineral composition except the ones from near the bottom of the hole, which consist largely of flakes of iron and heavy minerals. Quartz and feldspars are the principal constituents. The feldspars are principally orthoclase, microcline and acid plagioclase. A few microperthitic intergrowths were seen. The quartz has inclusions of rutile. Green hornblades and biotite are next to quartz and feldspar in order of abundance. These are not uniformly distributed, being abundant in some samples and practically wanting in others. Such irregularity in their occurrence may signify a banded gneissoid structure for the rock, but it must be remembered that the sand bailer is not an accurate sampling device, and in dumping, mica and hornblende would be the most likely materials to be washed away and lost. Minerals present in lesser amounts are titanite, apatite, garnet, muscovite, zircon and a mineral probably diopside, together with chlorite, sericite, kaolinite, and other alternation products. There are several rusty oxidized samples from various depths which evidently came from shear zones or joint planes, but aside from these decomposition is not advanced even in the upper portion.

"Garnet is found rather sparingly in the upper portion, but the samples at and near the bottom of the hole have much garnet, together with zircon, titanite and other heavy minerals. Titanite is more plentifully and uniformly distributed throughout the rock, and in some samples probably constitutes as much as 4 per cent. Muscovite is present in only a few samples. One sample, lacking hornblende and having considerable muscovite

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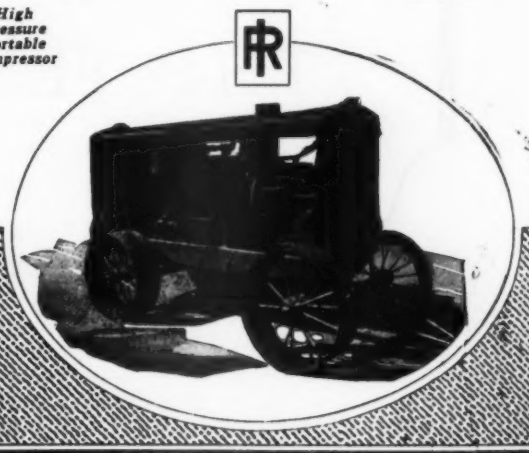

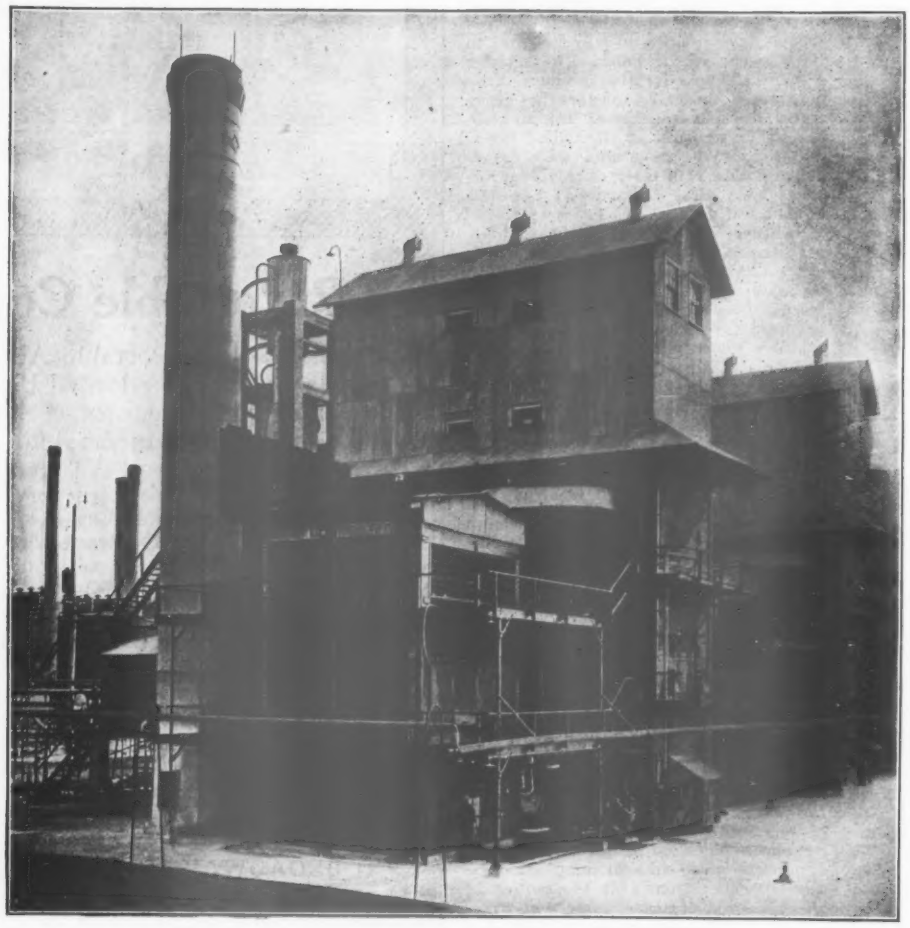

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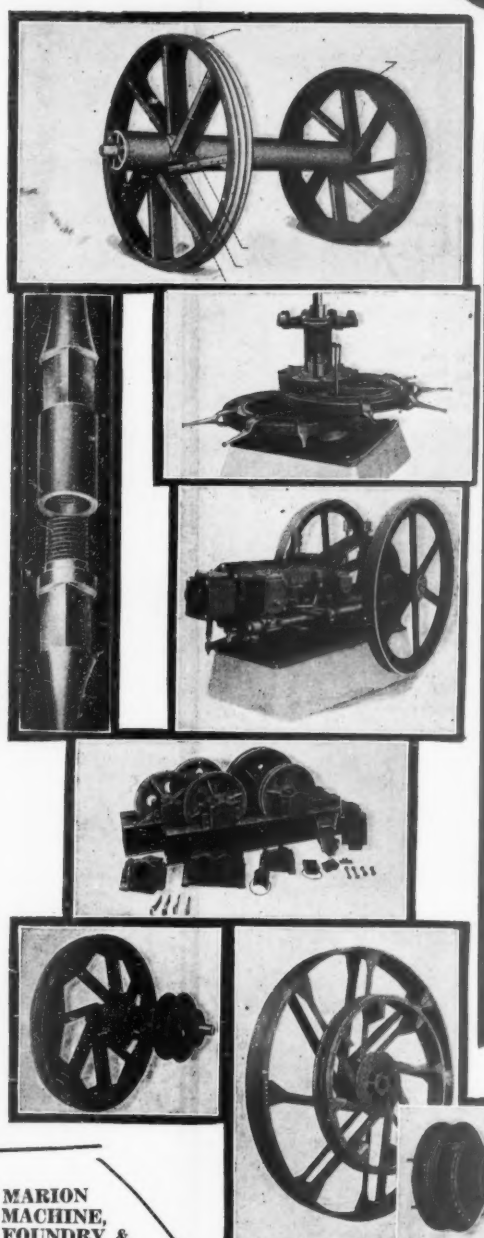

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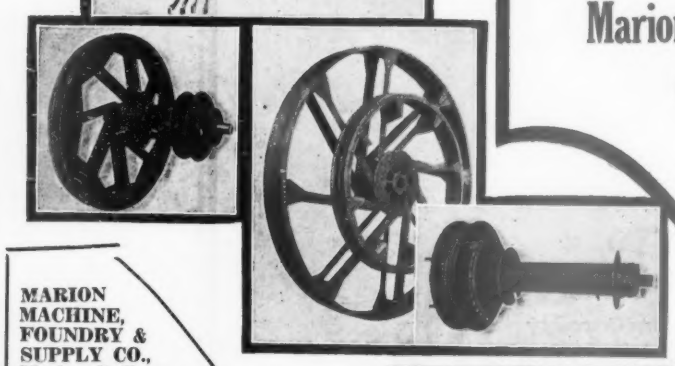

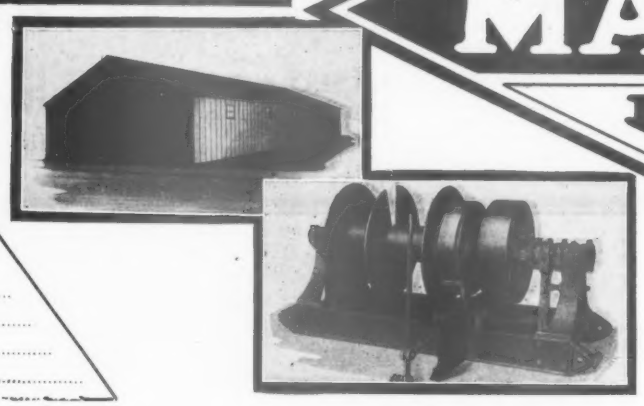

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"It is probable that the rock has a gneissoid structure. No evidence of this was noticed in the microscopic examination of the samples, but there is an alteration of light and dark samples which suggests a banded rock."

In Indiana, Kentucky and Illinois enough deep drilling has been done to establish the general belief that there is no big production in the lower levels in any of those states.

CENTRAL WEST

(Continued from Page 62)

east corner of the John Schmidt farm, in the northwest quarter of Section 17, Barton Township, Gibson County, and something near a mile west of the Ohio Oil Co.'s dry hole on the Parker-Wilson farms, is also a duster at a depth of 1,305 feet. The Consolidated Oil Development Co. recently drilled a dry hole in a test in the northwest corner of the Rich farm, Section 14, Columbia Township, Gibson County, 2 miles northwest of Oakland City, and 6 miles north and about 4 miles west of the dry hole on the Schmidt farm above mentioned.

The Waterloo Oil & Gas Co., Schuran Oil Co. and Estes, Manion and others are getting ready for active work in Maumee Township, Allen County, northeast of Fort Wayne, where some light oil and gas wells were uncovered during 1925. Work was entirely stopped, as far as drilling was concerned during the late fall and winter.

Several wells are drilling in the Trenton Rock area of Adams County, in Jefferson and Blue Creek, Monroe and Wabash Townships; one test on the Perdue farm in Salamonie Township, Huntington County; in Bear Creek, Jay County, and in Nottingham Township, Wells County.

Skidmore, trustee, of Lawrenceville, Ill., who drilled in the good well on the Walter Miley farm, in Logan Township, Pike County, is leasing up additional land in the western part of Pike County, and predictions are that much drilling will be done in Madison, Logan, Monroe and Clay Townships, of Pike County during the summer and fall months. The good well on the Miley farm is near the Olive Branch Church northeast of the Oatsville Field, and opens up considerable new territory for development work.

Illinois

Development work is slow in being started in any section of the Illinois fields. For a time there was a scarcity of water for drilling purposes but the recent rains made a plentiful supply, still the work does not make any better showing in the drilling of new wells. There are numerous old wells that have long been producers that are being deepened in the hopes of improving their production from lower pay sands. This is quite universal in Clark and Lawrence Counties. Some are meeting with success in the deepening of old holes while others are not. The best results so far come from the Stray sand area in Martinsville Township, Clark County, where the wells are now being to a large extent drilled a couple hundred feet deeper than the stray sand where the Niagara limestone formation is found and which shows some very nice producers. The Mahutska Oil Co. has just finished its No. 4 in the southwest corner of the Harriett Slater farm, in the southwest quarter of Section 30, Martinsville Township, Clark County, to the Niagara formation at a total depth of 1,610 feet, resulting in a 60-bbl. flush producer. In Oblong Township, Crawford County, the same company's No. 17 well on the O. R. Smith farm, Section 30, pumped 4 bbls.

In Wabash Township, Wabash County, the Adams Corner Oil Co.'s No. 7 well, 800 feet from the north line and 1,000 feet from the west line of the Mack Madden farm, in the northwest quarter of Section 7, showed a 24 hours' production of 120 bbls., from a depth of 1,439 feet, or 42 feet in the sand, the top of which was struck at 1,397 feet. J. J. Whiteside and others' third test, 200 feet from the north line and 700 feet from the west line of the Howard Armstrong farm, in the southeast quarter of Section 24, pumped 5 bbls. Top of sand at 1,422 feet and drilled 45 feet in the sand.

Illinois State Geological Survey

In the Press Bulletin Service, issued twice quarterly by the Illinois State Geological Survey, there are some interesting reports by Gail F. Moulton, of the survey. He writes of the recent petroleum developments in Illinois, as follows:

"The principal developments in the southeastern fields during the first four-month period of 1926, were in Clark and Wabash Counties. Activities in Clark County consisted principally of deepening the old wells from the Carper sand at 1,400 feet to the Devonian Silurian lime at 1,600 feet. Very great activity has begun in this area with the return of good weather.

"In Wabash County, a considerable number of wells have been completed with about the usual percentage of dry holes. The most important developments may be briefly sketched. Charles Forman and others found a new deep sand about 225 feet below the Biehl sand in their first well on the Cisil heirs farm, in Section 1, Wabash Township. Henly and others got a well on the Robert Yelton farm, in Section 5, Friendsville Township, which is slightly to the northwest of other production. Miller and others drilled in a well on the Ezra Bass farm, in Section 19, Friendsville Township, which opened a new producing area where prospecting had been recommended by the State Geological Survey and since that time six producers, averaging about 45 bbls. each, have been completed. An unverified report was current recently in Allendale, that Alspaugh and others had a good showing of oil in their well on the R. A. Liddle farm, in Section 27, Friendsville Township. This well is an outside wildcat which would arouse interest in a large territory if it proved productive.

"In Lawrence County, three tests of particular interest are being drilled. A well north of Bridgeport is reported to have been started with the purpose of making a deep test to the Trenton. This report has not been verified, but if true, the well should give very valuable information. Hartman and others are starting a deep test on the A. J. Vaught farm, in Section 3, Russell Township, Lawrence County. This well will be drilled to the McCloskey horizon in the hope of getting production there. Phipps & Blosser completed a dry hole on the J. N. Armstrong farm, in Section 25, Dennison Township. Smith, Andrews and others are drilling a deep test on the Ella Smith farm, in Section 27, Dennison Township.

Central Illinois

"In the Centralia district, the James Oil Co. is shutting off water in its Fanny McIntosh No. 4 well in Section 4, Centralia Township, Marion County, and is preparing to drill into a deep sand at 1,710 feet. The Ohio Oil Co. has rigged up for two wells on their adjoining property to the east.

"In the Sandoval Pool, there is one deep test being drilled on the northwest

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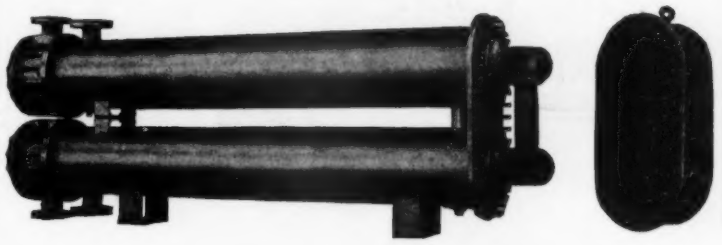

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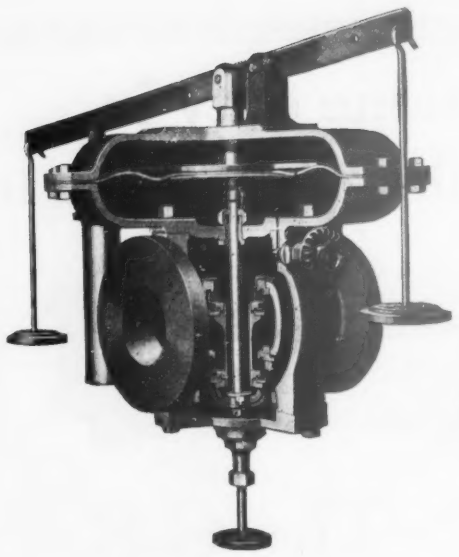

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side of the producing area. Two rigs are working in the Womac Pool south of Centralia.

"In Bond County, leases have been taken on the area recommended for prospecting by the Illinois State Geological Survey. It is probable that this interesting area will be tested in the near future.

Western Illinois

"The coming year promises to be a busy one in the vicinity of Macomb in northwestern Illinois. It is reported that W. A. Evans is drilling a well on the Neil Thoreson farm just north of Augusta. Mr. Fisher is starting a test on the M. H. Williams farm in Section 18, Township 4n, Range 4w, just south of Colmar.

"It is reported also that the Ohio Oil Co. and W. S. Bacon started a well on the C. B. Allison farm in Section 22, Township 5n, Range 4w, on what is known as the Tennessee structure. Three tests are planned for this structure. Harve Woods has leased a block of acreage between Burnside and Carthage in Hancock County and plans to drill a test. H. M. Hainline and F. G. McClelland have been leasing in the vicinity of the Scioto Dome and contemplate drilling a test there. Rose & Lyberger are planning to drill some tests north of New Philadelphia in Section 23, Township 6n, Range 1w.

Southwestern Illinois

"In southwestern Illinois there is considerable activity in the vicinity of Sparta. Most of the acreage recommended for prospecting in the first number of Illinois Petroleum has been leased up and new developments will start soon. E. G. Mason moved his rig into the central part of Section 1, Township 4s, Range 6w, near Tilden for a second test. The first well was abandoned at 1,240 feet. The well on the Foster farm is drilling at 700 feet after being held up for some time by a bad fishing job. This test should be completed within a short time.

"The coming summer promises to be a time of great activity in oil prospecting in Illinois, particularly in central and western Illinois. If the greater part of this drilling is done on a geologic basis new pools should be opened up or large areas in western Illinois condemned."

Central Ohio

Only four completions were reported from the central Ohio gas belt proper during the week and about the same number from the "offside area" of the field. There were 11 new wells started drilling since the last report and 5 additional new locations staked out for wells. Operators are getting busier from day to day and quite an amount of new work is planned by all the large and small gas concerns as well as oil operators

In Congress Township, Wayne County, Warren, Palmer and others' second test, 1,020 feet from the north line and 335 feet from the west line of the S. A. Awanson 86 acres, in Section 36, is a very fair-sized gas producer.

The Logan Gas Co. drilled in a fair gas well in the Maxon sand, in the northeast corner of the J. W. Barnhill 150 acres, Lot 23, Carthage Township, Athens County.

In Dover Township, Cuyahoga County, in the Cleveland Field, McGrath and others' second well, 150 feet from the north line and 500 feet east of the road on the J. C. Lemmon 30 acres, Lot 28, was shot in 11-foot of sand and is a fair gas producer. In Strongville Township, same county, the East Ohio Gas Co. has a light gas well at a test on the B. H. and E. A. Adams farm, mapped as the Strong farm, in Lot 50.

Offside Areas

In Section 35, Laurel Township, Hocking County, Pleukarp and others' second well on the Shannon Kuhn farm, is a light gasser.

In Barlow Township, Washington County, Orndorf and others have a fair Big Injun sand gas well at a test on the M. A. Anderson. The Muskingum Gas Co. has a nice gas well in a second test on the Mary J. Smith, Section 688, and a fair gas well at No. 1 W. D. Starlin, Section 1029, same township.

New Locations

The Logan Gas Co. staked a location for a second test in the northwest corner of the Floyd Shannon 104 acres, Section 3, Orange Township, Ashland County. Hulse & Kundtz located a test on the William Burns 160 acres, Section 23, Clear Creek Township, same county, and 1,500 feet south of the road and the same distance west of the north and south road.

In Hardy Township, Holmes County, the East Ohio Gas Co. set a stake in the northeast corner of the Bernice Allison 82 acres, Lot 38, for a test, also a location for a second test in the northeast corner of the John R. Hastings 100 acres, Lot 25, same township.

The Logan Gas Co. made a location for a second test, 720 feet from the south line and 620 feet from the west line of the S. A. Wilson 180 acres, Lot 35, Carthage Township, Athens County. This 180 acres is a part of a farm of 1,050 acres which is owned by Wilson.

Drilling New Wells

In Brown Township, Knox County, the East Ohio Gas Co. is drilling No. 11 in the northeast corner of the O. J. Beck 100 acres, Section 31, and the Ohio Fuel Gas Co. is drilling No. 6 near the northeast corner of the John H. Workman 79 acres, Section 4, same township.

In Orange Township, Ashland County, the Preston Oil Co. is drilling No. 2 on the P. C. Fritzinger 89 acres, Section 3. In Hanover Township, the East Ohio Gas Co. is working at a test near the northwest corner of the J. H. Miller 100 acres, Section 27.

John Arthur is drilling a test in the southeast corner of the William A. McCabe 8 acres, Lot 11, Lafayette Township, Medina County.

In Paint Township, Wayne County, the Ohio Fuel Gas Co. is drilling a test on the J. M. Westcott 161 acres, Section 9.

In Paint Township, Holmes County, the Ohio Fuel Gas Co. is drilling a test near the southwest corner of the Dan C. Wengard 65 acres, Section 6. In Hardy Township, same county, the Pure Oil Co. is drilling No. 3 on the Warren P. Close farm, Section 14. In Kilbuck Township the East Ohio Gas Co. is drilling a test near the northwest corner of the Christian Miller 80 acres, Lot 22, and also a test near the northeast corner of the Jacob A. Middaugh 64 acres, Lot 23. In Salt Creek Township, same county, the Empire Gas & Fuel Co. is drilling a test on the Adam Karch 100 acres, Lot 7.

The Logan Gas Co. is drilling a test on the Eaton Chase 140 acres, Lot 3, Carthage Township, Athens County.

MICHIGAN FIELDS

(Continued from Page 62)

drillers, to sink the first well on the property he has leased here. The well will be drilled in Saginaw Township, on either the Hegenauer, Brown or Geddes farms. Mr. Russell said he talked with a number of prominent oil men in Pennsylvania during his trip, and everyone professed genuine interest in the operations under way here. The progress being made here is being watched eagerly."

The Ohio Oil Co., which is preparing to start development work on the Mershon-Eddy-Parker Co. property near the Pere Marquette crossing on North Michigan Ave., in Saginaw, in the immediate future, has received its charter authorizing it to do business in Michigan.

Other Developments

Much interest is taken in the report that a far western test will be made in hope of extending the Saginaw producing area in that direction. It is stated that Charles Murrin, Ohio operator, is making preparations to start a test on the Henry Owen farm, on the River Road to Freeland, west of the Tittabawassee River and about one-half mile north of the State Road and approximately 5 miles almost due west of the Saginaw discovery well, and about 3 miles west of the

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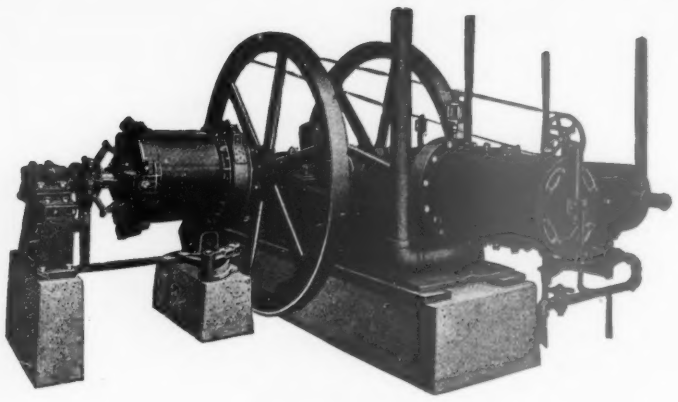

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BRANCHES AND AGENCIES — Marietta, Ohio; Logan, Ohio; Newark, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Frick & Lindsay Co., Bradford, Pa., and Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Cal.; Frick-Reid Supply Company, Tulsa, Oklahoma, and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming.

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test being drilled on the Mrs. Marshall farm, Section 16, by V. M. Vorhees and others. William Crowley, Roseville, Ohio, will do the contract work for Mr. Murrin.

Leasing Activities

Leasing of acreage for development purposes in the vicinity of Saginaw is under way again after a few days letup, but is growing greater each day.

A. H. Russell, Oklahoma operator, filed for record leases on 80 acres in Saginaw Township, Saginaw County, owned by Burton B. Brown, Ray Geddes and Andrew Hegenaur.

Adabel Scott of Saginaw, filed two leases, one on 52 acres in Milwaukee Township and the other on 32 acres in Kockville Township. Two leases were filed by W. E. Seymour on 3½ acres in Carrollton Township.

Elvin Tilton of Moundsville, W. Va., filed two leases for record on 142 acres in Kockville Township.

Other late leases recorded at the office of Miss Elizabeth B. Hess, Register of Deeds, are as follows: George A. Wickham, Saginaw, two leases in Buena Vista Township, covering 110 acres. In one lease it is provided that drilling must start within 30 days.

Nine leases were made to the Farmers' Mutual Leasing Association, including 240 acres in Taymouth Township and 220 acres in Birch Run Township.

The Venus Oil Corp. of Ashland, Ky., one of the late arrivals in the Saginaw Field, secured three leases, two being on 80 acres in Bridgeport Township, and one of 40 acres in Buena Vista Township.

Glen W. Bacon, of Saginaw, recorded a lease on 3½ acres in Carrollton Township.

The T. McNally Oil Co. filed on record a lease on 2½ acres in Saginaw Township within defined limits of the present producing area. John J. Klise, of the Klise-Eckstein-McCann Co., of Wooster, Ohio, filed three leases of 200 acres in James Township.

KENTUCKY-TENNESSEE

(Continued from Page 60)

ing May 13, 61,174.02 bbls.; week ending May 22, 64,342.57 bbls.; week ending May 29, 61,519.66 bbls.

Pipeline runs during the month of May in the western division amounted to 121,260.04 bbls., a gain of 3,705.53 bbls., compared with April figures. The runs were distributed by counties and districts as follows:

	Runs	Increase	Decrease
Warren	36,184.61	.....	1,988.75
Barren	21,014.61	.....	2,199.61
Allen	26,449.65	3,269.68	.....
Cumberland-Monroe	4,081.93	345.31	.....
Ohio	26,298.69	3,880.97	.....
Hancock	2,784.28	.....	26.33
Daviess	1,528.32	.....	84.10
Hopkins	1,450.00	.....	12.26
Simpson	760.08	.....	114.09
Logan	382.60	309.44	.....
Clinton	325.27	325.27	.....
May runs	121,260.04	8,130.67	4,425.14
April runs	117,554.51		
Difference	3,705.53		

Eastern Division

Very little interest is manifested in development work in parts of the eastern division of Kentucky, as few completions are reported from that area at present, occasioned to some extent by the recent poor supply of water and the large expense entailed in operations, as material must be freighted to fields far removed from railroad transportation, sometimes more than 25 miles distance. The North Weir Field of Lawrence-Johnson Counties is doing the bulk of the work which is mostly under the supervision of the Swiss Oil Corp. on its holdings in the two counties. The Petroleum Exploration Co., one of the large operating companies of the eastern end of the State, is reporting but little work under way and what it is doing is centralized in the Idamay Field of Lee and Owsley Counties, although it maintains some good holdings and numerous locations yet to drill in the Johnson-Lawrence areas, as well as in Morgan and other counties. The Cumberland Petroleum Co., another of the large concerns, is doing little as is the Bed Rock Petroleum Co., Gillespie interests and others that were busy a year or so ago in the east end. Reports are meager from the Floyd-Knott areas where the wonder gas belt is located.

Only six completions were reported from the eastern division the past few days located mostly in the North Weir Field and in the Idamay area.

In the North Weir Field of Lawrence-Johnson Counties, in District 22, the Swiss Oil Corp. has a 5-bbl. well from the Weir sand in its No. 10 on the R. N. Sparks farm. In District 22-A, the same company's No. 14, on the Martha Kelley farm, is reported at 8 bbls., and No. 8, on the Herbert Skaggs farm, at 5 bbls. In District 32, the same company's No. 43, on the J. J. Gambill farm, near the company's main camp, is a 10-bbl. pumper, while in District 33, this company has an 8-bbl. pumper in No. 19, on the J. M. Fyffe farm. In District 32, same company is drilling No. 43 on the P. P. Holbrook farm.

In the Ravenna Field, District 8 of Lee-Owsley Counties, the Superior Oil Corp.'s No. 8, on the Simp Horn farm, is an 8-bbl. pumper.

Western Division

In the western division of the Kentucky Field, the Barren County development is the largest in the State at this time and is being pushed by the Owensboro district of Ohio, Hancock and Daviess Counties. Warren County is improving to some extent as is Allen County. Nothing new has developed in Casey County, although the well of Irwin & Anchutz on the Ben Russell farm, near Dunville, is reported showing for a commerical producer, but is not as yet reported on the pump.

Heavy rains have prevailed over the western division and there is now an abundance of water for drilling purposes.

Barren County

Barren County comes to the front again with the best completion report for the week in any part of Kentucky, the Eslinger Oil Co.'s No. 6, on the C. B. Jones farm, in the Lecta Pool, about 3 miles out of Glasgow. The pay was struck at 493 feet and filled right up to the top of the hole. When put on the pump made at the rate close to 50 bbls. and is holding up. It looks to be as good as any well yet drilled on the lease, outside of No. 1, the discovery well of the pool. No. 7, same farm, will start drilling at once. In the vicinity of the Jones lease, Coombs and others' No. 1 Grady farm, is showing for 20 bbls., with No. 2 nearing completion.

In the Emery-Moore Pool, Fred C. Moore completed his No. 9 on the Bruton farm, at a depth of 536 feet, for a 6-bbl. pumper, and is starting No. 10 on the same lease. The Ruby Oil & Gas Co. is drilling No. 6 on the W. E. Steffey farm.

In the Hall Baker Pool, the Consolidated Gas Co. is due in with No. 23, on the H. W. Duff farm, as well as No. 10 on the J. H. Baker farm. Harrington & Norris Brothers are close to pay sand at their No. 12 R. E. Evans farm.

In the Knob Road district, the Star Oil Co. drilled in No. 5 Richardson, which shows for a flush around 20 bbls. Ziegler Brothers are close to pay sand at No. 5 C. D. Boyd farm.

Four wells are nearing completion in the Gorby Pool. They are J. W. Porter's No. 18 McGlochlin farm; Hiland Oil & Gas Co.'s No. 18 Cassaday farm. Jacob Best, trustee's No. 6 Sanders farm and Lew J. Emery, Jr., Sons' No. 5 Jones farm, while T. L. Gorby and others are starting No. 3 Lessenberry farm. J. J. Sayre's second well on the Hatfield farm, is estimated at 5 bbls.

In the Jimtown Road district, Lewis J. Emery, Jr., Sons' test on the Nuckels farm, has been completed for a duster at a depth of 540 feet. The Wood Oil Co., drilling a wildcat venture in the same area, got a showing of oil estimated around 1 bbl.

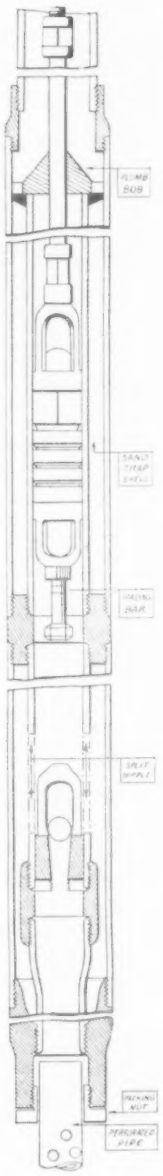
In the Oil City section, Lew J. Emery, Jr., Sons are drilling a third well on the Barley Neely farm, northwest of Glasgow.

The Wood Oil Co. is drilling a wildcat well along the highway north of Glasgow, on the Hutcherson farm, and an-

Stop Pulling Costs

by installing a B. C. D. Sand Trap Working Barrel

it will not sand up—



THE B. C. D. Sand Trap Working Barrel constructed along new designs is an entire new departure from present sand barrel principles.

Over two hundred now being sucessfully operated by six of the major companies in the Burbank and Rainbow Bend fields, some of which have been in service over a year.

On wells cutting cups four to six times weekly and sanding up every three to four days with all other makes of sand barrels—after being equipped with the B. C. D. Barrel are giving an average run of from ninety to a hundred days continuous service.

Get your maximum production while the other fellow is down pulling or cleaning out and cut your lifting costs several hundred per cent.

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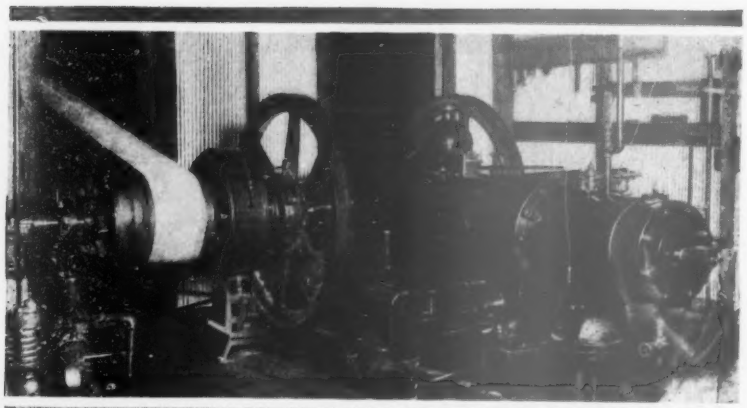

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The drilling engine, running mate to "the simplest oil engine on earth," the "PRIMM" pumping engine, has a "rock bottom" number of moving parts.

Have you data on this engine? It's yours for the asking.

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MARION, OHIO

other wildcat being watched with much interest, is Baker and others', at the village of Eighty-Eight. Should these two ventures prove productive, it will mean the opening of two additional pools for Barren County.

Owensboro District

Only four completions were reported from the Owensboro district of Ohio, Hancock and Daviess Counties, two small producers and two dusters. Nearly every available string of tools in the district has been started up now that there is a plentiful supply of water for drilling purposes. The production of the district is gradually growing, especially in the Ohio County part of the field, where the bulk of the work is being done.

The White Plains Oil & Gas Co.'s No. 2, on the A. R. Brown 125 acres, is estimated at around 5 bbls., and the Panther Creek Oil Co.'s No. 12, on the John W. Smith 120 acres and 400 feet southeast of No. 11, is about the same size producer as the Brown well.

The Penn-Indiana Oil Syndicate's test on the Holbrook 50 acres, being the east 50 acres of the T. Ralph farm of 100 acres, came in a failure, while the Leeper Oil Co.'s No. 10, on the Len Helm farm, proved a duster. This farm has had some very nice producers during the past four months, this being the first dry hole found during that period.

White & Nicklin, who secured a lease on the O. T. Burdette 25 acres, about two years ago, have just sold their interest to the Panther Creek Oil Co. They have drilled seven wells on the lease, all producers, and these go in the trade. The consideration was not given, but it is understood they turned it over at a handsome profit. White and Nicklin are both young oil men and will remain in the Owensboro Field to develop other leases held by them. The lease is reported now under the name of the Victor Oil Co. No. 8, on the Burdette farm, was started and the new purchasers will complete it at once. It had reached a depth of 250 feet when shut down six months ago.

The Leeper Oil Co. has made a location for No. 1 on the J. I. Collier farm, in the Collier Pool. C. E. Daugherty and others are starting No. 11 on the Lucida E. Crowe 150 acres, 400 feet east of No. 8 on the same farm. The Chicago Petroleum Syndicate is nearing sand at No. 6 on the Guenther-Gant 270 acres, in the Swope Pool. Penn-Indiana Oil Syndicate is drilling No. 2 on the W. Griffith 270 acres, while the White Plains Oil & Gas Co. is starting No. 4 on the J. J. Midkiff farm, in the Midkiff Pool. J. W. Loman, attorney, is starting No. 3 on the Joe Bob Ellis 50 acres. The Wood Oil Co. is going along nicely at its No. 1 on the west 50 acres of the Drane & Owen 100 acres, just south of the Joe Bob Ellis 150 acres.

Tremor & Thompson are drilling their No. 1 on the C. Roach 130 acres, which was dry in the Jett sand to the Barlow sand, in hopes of making a producer from it. The White Plains Oil & Gas Co. is nearing pay sand at its second venture on the John Ward 50 acres. The Leeper Oil Co.'s test on the J. A. Greer 100 acres, southwest of the Midkiff Pool, at 14 feet in the Jeff sand, had a light showing of oil and will drill deeper. The Penn-Indiana Oil Syndicate is starting its second venture on the Laura Mercer 108-acre farm.

Warren County

Work is picking up some in the Bowling Green Field of Warren County, but not what it should be. T. A. Sheridan has drilled in his No. 5 on the Georgiana Davenport lease, in the Davenport Pool, for a duster at a depth of 460 feet. The Derby Oil Co. has one of the same kind at a second test on a part of the E. G. Savage farm. Paul Cooksey has a 2-bbl. pumper in No. 8, on the John W. Covington farm, Block 8, at 450 feet. The Bull Bayou-Homer Oil Co.'s No. 12 E. G. Savage farm, is a 2-bbl. pumper at 550 feet.

E. M. Treat and others are due to reach the deep pay soon at its No. 10 on the Edward and Betty Bass farm. Onsel Brothers are in the deep sand at No. 13 Mary Ferguson and, No. 7 on the C. G. Davenport farm, Section 78. Loman & Bolling are delayed by a fishing job at No. 7 on the Ben Price farm. Hogan and others are drilling a well on the Vic Chaney farm.

In the Scottsville Field of Allen County, but one completion was reported for the week and that was Mealey & Morris' No. 1, on the Jim Lewis farm, which was dry at 300 feet. Fred W. Owens is drilling No. 16 on the A. A. Davenport farm. Citizens Oil Co. is drilling No. 17 I. N. Rickman. The Allen Oil Corp. is at work at No. 7 J. E. Person. O. M. Widdowson's No. 4 Frank Gibson farm; Parsons & Reid's No. 6 R. B. Freeman, and the New Domain Oil & Gas Co.'s No. 1 Claud B. Haley farm, are all drilling.

In the Franklin Field of Simpson County, the Lincoln Oil Producing Co. is drilling No. 3 on the Holeman farm.

No new completions are reported from any section of the Cumberland-Monroe-Adair Counties pools.

Mississippi

Charles N. Haskell, well known in the Central West fields as well as the Mid-Continent Field, is making preparations for the drilling of a wildcat near the town of Conway, in Leake County, Mississippi.

B. B. Jones has a rig in for a test near the town of Alta, in Kosciuski County, while the Transcontinental Oil Co. is putting down a test in Madison County.

EASTERN FIELDS

(Continued from Page 60)

becca Fogarty farm. The same company has started to drill a test on the Lewis Woods farm, and a rig is up on the M. A. Cobb farm. In Cabin Creek district, the same company is due in the Berea grit on the Robson-Prichard tract.

Boone County

The Pure Oil Co. is becoming somewhat active in Sherman district, Boone County. This company is drilling Nos. 19 and 20, on tract B, of the Lafollette, Robson, Prichard tract. No. 21, on the same tract is fishing at 1,890 feet. The same company is drilling tests on the J. C. Warren, P. C. Bone and Jacob D. Coon farms.

On McKim Creek, McKim district, Pleasants County, George Stout and others have made a location and are moving in a drilling machine for a test on the William Elliott farm. On the St. Marys and Ellenboro Pike, McKim district, O. C. Cunningham has started to drill a test on the T. H. Hart farm.

Gilmer County

In DeKalb district, Gilmer County, the Philadelphia Oil Co. has the rig completed on the G. H. Stalnaker farm. In Center district, the Hope Natural Gas Co. has started to drill on the Bennett heirs' farm. The same company has rigs up on the J. N. See, Martha Turner and R. M. Marshall farms. In the same district, the Chartiers Oil Co. is starting a second test on the Mary Stump farm. In DeKalb district, Weaver & Lewis have a rig up on the Mary Kelly farm. In the same district, S. G. Roberts & Co. have started to drill on the W. W. Wright farm.

Shallow Territory

In Lot 24, Newton Township, Licking County, Ohio, the Ohio Fuel Supply Co. has completed a second test on the Ellen E. Forry farm. It is good for 6 bbls. a day in the Berea grit.

Athens County

In the Fisher Pool, Section 75, Athens Township, Athens County, the Gross & Frebault Co. has completed in the same formation No. 5 on the Daniel N. Higgins farm, good for 2 bbls. a day in the Berea grit. In the same pool, Section 19, Alexander Township, Cook and others have completed a test on the M. Brooks farm, dry in the same formation. In the old Corning Field, Monroe Township, Perry County, Keller Brothers & Co. are drilling No. 28 on the George Roberts farm.

In the northwest quarter of Section 24, Ward Township, Hocking County, the Kachelmacher estate has completed and shot in the Clinton sand No. 21 on the

Lightning protection

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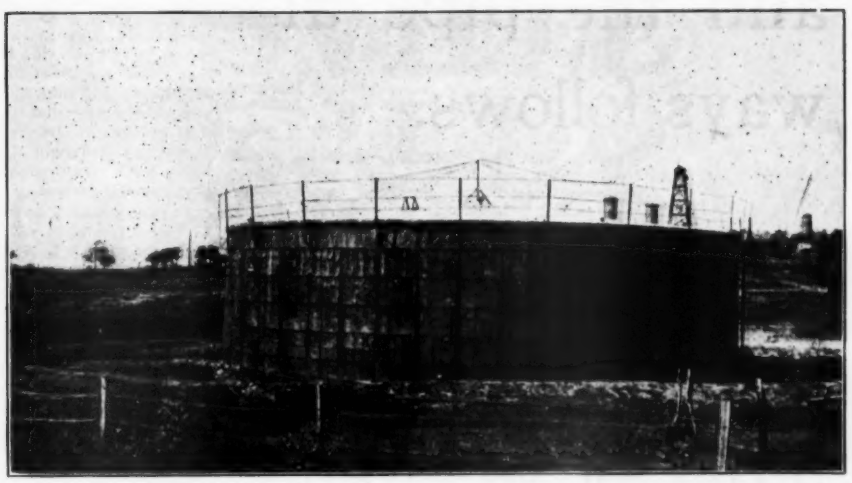

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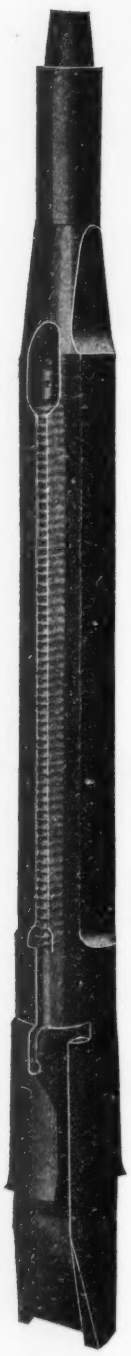

The Crescent Steel Cutters set in an unyielding position in a *one-piece body* reams the hole full and the pipe always follows.

Extra long cutters give more material for wear and dressing.

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Western Supply Company
Tulsa, Oklahoma

"Manufacturers of Superior Devices"

Sole Makers

CROTTO THREE JAW CLAMPS

James J. Tracey estate. It produced 15 bbls. the first 24 hours.

In the northwest quarter of Section 29, Enoch Township, Noble County, Way Wickens & Co. have completed and shot in the Berea grit No. 6 on the W. D. Harper farm. Despite the fact that they got 15 feet of sand and 8 feet of pay it is not good for more than 2 bbls. a day.

In Section 23, Alexander Township, Athens County, the East Ohio Oil & Gas Co. has a 3-bbl. pumper in the Berea grit at No. 5 on the F. R. Baker farm. In Section 30, the same company got a similar pumper at No. 5 on the Clinton Atkinson farm.

In Section 9, Liberty Township, Washington County, Heldman & Co. have a gasser in the Maxon sand at a test on the Charles Robinson farm. In Section 2, Fearing Township, S. A. Palmer & Co. have a duster at a second test on the J. J. Zimmer farm. In Muskingum County, the Miracle Oil Co. of Ohio, had the same luck at a second test on the James Devol farm.

Morgan County

In the northeast quarter of Section 21, York Township, Morgan County, Ohio, the Sun Oil Co. has completed and shot in the Berea grit a second test on the E. Samuel Burkhart farm. It is a 5-bbl. pumper. In the same locality and township, the Pure Oil Co. has completed a second test on the W. F. Williams farm, good for 10 bbls. a day in the same formation. In Lot 1,217, Sutton Township, Meigs County, the same company has started to drill No. 4 on the Yost heirs' farm.

In Section 25, Center Township, Noble County, J. H. Yearian and others have completed in the Buell Run sand No. 3 on the E. C. Brown farm. It is a duster. In Section 11, Franklin Township, Monroe County, Ray Slack & Co. have completed No. 4 on the Herman C. Burke farm, good for 2 bbls. a day. In Section 21, Belmont County, Frank Hamilton and others are due in the sand at a test in the N. Jeffers farm. In Knox Township, Jefferson County, Charles Kelly & Co. are drilling a test on the D. E. Campbell farm.

In the northeast quarter of Section 21, Jackson Township, Knox County, the Margaret Oil Co.'s No. 5, on the C. H. Davidson farm, is an 8-bbl. pumper in the Berea grit. At Bollin Mills, Section 31, Knox Township, Vinton County, Beeghley & Shaffer have completed in the same formation a second test on the Beeghley-Shaffer farm, the same kind of a pumper.

In the northwest quarter of Section 22, Fallsbury Township, Licking County, the Leonard Oil & Gas Co. completed and shot in the Berea grit No. 5 on the Myers & Co. farm. It produced 10 bbls. the first 24 hours. In Section 29, Knox Township, Columbiana County, McDonald, Meeks, Maxwell and others have completed in the Berea grit No. 3 on the Raymond Miller farm. It is a duster.

In Lot 24, Newton Township, Licking County, E. J. Edmonds & Co. have completed in the Berea grit No. 9 on the Ellen E. Forry farm. It produced 6 bbls. the first 24 hours after shot. In the same lot and township, the Ohio Fuel Supply Co. has started to drill a second test on a part of the same farm. In Section 23, Washington Township, Monroe County, the Bentz Oil Co. is drilling a test on the James K. Howell farm. In Section 7, Independence Township, Harris & Co. are due in the sand at a test on the Hintelzman farm. Grau & Co. have the rig completed for No. 4 on the William B. Kiggins farm.

In Section 2, Salem Township, Washington County, E. A. Metcalf has a duster at No. 7 on the S. Beach heirs' farm. In Section 73, W. C. Patterson & Co. have the rig completed for a test on the Floyd L. Bell farm. In Independence Township, J. T. Campbell & Co. have a 7-bbl. pumper in the second Cow Run sand at a second test on the John Bowersock farm.

Southwest Pennsylvania

The southwest Pennsylvania fields had very few completions, the best being a gasser. In Spring Hill Township, Greene County, T. J. Hamilton & Co. drilled a test on the Montgomery Kinney farm into the Big Injun sand. It is good for 15,000,000 feet a day.

In Richhill Township, the Carnegie Natural Gas Co. has a Big Injun sand gasser at No. 3 on the John J. Cooper heirs' farm.

Midway between Leetsdale and Duff City, Allegheny County, P. J. Sohn and others have completed in the Boulder sand a test on the William Shannon farm. It is a fair gasser. In the Duff City extension, Harbison and others have completed a test on the Ickley farm. It is good for 3 bbls. a day in the Snee sand.

CARE MUST BE TAKEN IN BLENDING BENZOL

(Continued from Page 70)

gasoline is only about 0.75. So a gallon of benzol contains more combustible material than a gallon of gasoline. But, as benzol is much lower in hydrogen than gasoline, this factor is offset for the most part. However, to lean the mixture somewhat is possible, and this should be done in using benzol whenever possible.

MR. LORD:—Then a man buying benzol would have to cut down the carbureter?

MR. BOYD:—Yes; provided he can get better operation by doing so, and the chances are very great than he can.

MR. LORD:—Mr. Cobleigh, did you adjust the carbureter?

MR. COBLEIGH:—Yes; I happen to have a carbureter that has a dash adjustment for rich or lean mixtures. Under ordinary conditions, I set the mixture lever at about mid-position. With Mitchell gasoline, I can turn it complete over to the lean side.

MR. LORD:—Is that as far as it will go?

MR. COBLEIGH:—It will not go farther than the position at which I got the 20 per cent increase in economy. If the carbureter adjustment is not changed when Mitchell gasoline is used, I doubt whether any increase in economy will result.

MR. LORD:—Would the carbon condition be overcome?

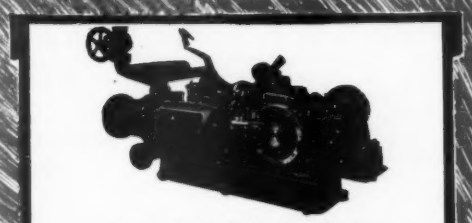
MR. COBLEIGH:—It ought to be helped by making the mixture leaner; but, as I did that, I do not think that was the cause.

MR. BOYD:—While we are talking about increased economy from the use of benzol, it should be borne in mind that in present engines this is not a large factor. If we put it on a basis of heat-units, we find that the actual thermal content of a gallon of benzol is only from 7 to 10 per cent more than that of a gallon of gasoline. Although benzol is heavier than gasoline, it is much lower in hydrogen, which is an element of very high heating value. A 40 per cent mixture of benzol in gasoline does not then add much to the total heating value of the fuel. Hence, adjustment of the carbureter, which benzol in the fuel makes possible, is not very great, so far as leaning it down is concerned. The fact is that nearly every carbureter could be adjusted leaner without changing the fuel at all. After a man has begun to use benzol, he may find that the mixture is so rich that he begins to get fluff carbon, which he did not get from gasoline. The only reason he did not get it before was that gasoline is low in carbon. But the chances are that the mixture was too rich. So, while benzol will allow him to lean the mixture somewhat, it is likely that he could have done nearly the same thing with gasoline alone.

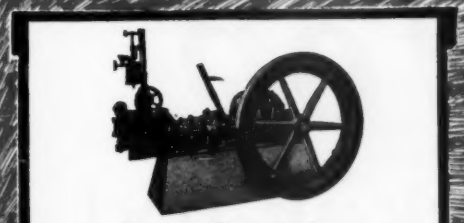
OIL CARRYING VESSELS

WASHINGTON, D. C., June 19.—Of the 174 steam, motor, sail and unrigged vessels of 16,377 gross tons, built in the United States during May, 54 vessels of 5,264 gross tons were for the use of fuel oil and 80 with 1,848 gross tons were for the use of gasoline. All of the vessels built to use gasoline were of metal construction and all except 5 of those built for the use of fuel oil.

"TICO 2" Gas Engine



Acme Twin Cylinder Engine



Acme Drilling Engine

TITUSVILLE OIL FIELD EQUIPMENT

The Titusville "TICO 2" Gas Engine,—the Titusville Acme Twin Cylinder Drilling Engine—the Titusville Steam Drilling Engine—are truly without a peer in their respective fields.

They're giving splendid, efficient service and are the recognized standard of construction and design wherever oil is drilled.

Ask your neighbor about his experience with the Acme and Tico units.

The Continental man will be glad to tell you about their performance and construction.

The TITUSVILLE IRON WORKS Co.
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stop
sucker rod
BREAKAGE

The tremendous losses heretofore incurred by rod breakage can be reduced to a minimum through the use of Sheffield Sucker Rods. The special analysis steel from which Sheffield Sucker Rods are manufactured coupled with the Sheffield Perfected Joint has given to Oil Producers a Rod that has indeed made an enviable record for dependability and economy in service.

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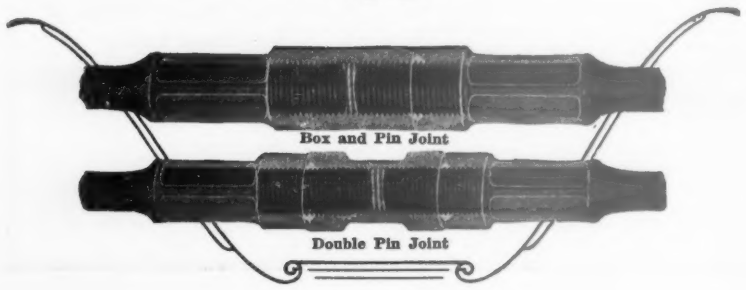

INCREASING PRODUCTION OF OIL BY THE USE OF THE GAS LIFT

By S. F. Shaw
Mining Engineer, San Antonio, Tex.

The possibilities of increasing production of oil by use of the gas lift are greater than generally supposed. The term gas lift will be employed to include both air and natural gas, whether or not compressors be used to compress the gas or whether the gas be that which is dissolved in the oil. Any well that is brought in for a production of 500 bbls. or more per day is a proper subject for investigation.

When a well is first brought in, if at all possible, the rock pressure and volume of gas should be determined, as well as the quantity of oil and water. If to these data there be added the depth of the well and diameter of the oil string, the engineer is in a position to determine whether a gas lift will operate successfully. In order to conserve the gas in the pool a well should be tubed immediately so that the consumption of gas is reduced as nearly as possible to the quantity necessary to raise the oil to the surface. This quantity cannot, of course, be reduced to a point that is less than the amount dissolved in the oil. In many fields the quantity of gas dissolved in the oil is several times that which is required to lift the oil to the surface; yet under our present method of flowing wells several times the quantity dissolved in the oil actually raised is allowed to escape.

Assuming that a well has been brought in for an initial production of 2,000 bbls. at a depth of 2,000 feet and at initial pressure of 700 pounds per square inch, it is possible for 140 cubic feet of gas to be dissolved in every barrel of Oklahoma crude 31 degrees A.P.I. By extending the curve given by Dow and Calkins in United States Bureau of Mines Bulletin No. 2732, February, 1926, we can show the decrease in dissolved gas content as the pressure decreases. Tabulation is given below of the quantity of dissolved gas, as well as the quantity of gas required to raise a barrel of oil to the surface under certain assumed conditions:

Quantity of Gas That Can Be Dissolved in One Barrel of Oklahoma Crude at 31 Degrees A.P.I., and Quantity of Gas Required to Lift One Barrel to the Surface

Depth	Pressure Lbs. per Sq. In.	Cu.Ft. Dissolved in 1 Bbl. Oil	Ft. Submergence of Oil at 0.9 Sp. Gr.	Feet Lift	Cubic Feet of Gas Required to Lift 1 Bbl. to the Surface: At 100 per Cent	At Obtainable Efficiency	Per Cent Dissolved Gas Compared to the Quantity Required
2,000	700	140	1,790	210	8.06	12.40	1129%
2,000	600	120	1,535	465	18.52	29.54	406
2,000	500	98	1,280	720	30.12	51.05	192
2,000	450	88	1,150	850	36.63	65.41	134
2,000	400	78	1,025	975	45.67	89.59	87

Assuming that the well has been propery tubed, the gas that can be dissolved in one barrel of oil at 700 pounds pressure per square inch is 11.29 times the amount required to lift a barrel to the surface. At pressure of 450 pounds the quantity still dissolved in one barrel of oil is slightly greater than that necessary to raise it to the surface, but with pressure reduced to 400 pounds there is insufficient gas to cause the well to flow steadily and it is probable that the well will begin to flow in "heads," although a fairly continuous flow might result for a further period if sufficient gas can reach the well from some distance. This use of gas, however, would rob the distant oil of its dissolved gas and prevent much of it from flowing through the sands to the well. The time interval between heads results from the necessity of the oil to rise in the well to such a level that the gas accumulated and dissolved in the oil becomes sufficient in quantity and pressure to flow the well for a short period, and after the gas has escaped the fluid level again drops down.

At this stage of flowing by heads, or even before this stage is reached it is probably advisable to consider the installation of a compressor to furnish the additional quantity of gas necessary to make up the amount which the oil now fails to contain in a dissolved condition to permit the gas lift to operate continuously and efficiently. The quantity of gas necessary to add by means of the compressor will gradually increase as the dissolved gas becomes depleted, until finally the fluid level drops to a point where the gas lift cannot operate to advantage. When this stage is reached it is advisable to get the well on the pump as quickly as possible.

Wells with initial production of 2,000 bbls. per day which have declined to 200 or 300 bbls. per day can often be restored to 500 bbls. or more per day, and in some cases have been raised to 1,000 bbls. per day.

Examples of production restored in this manner are found in Braman, Garber, Long Beach, Santa Fe Springs, Smackover and Tonkawa, and I expect to see further examples in such places as Big Lake, Lisbon, Panhandle, Rainbow Bend, Spindletop, Urania and Wewoka.

PIPELINE VETERAN DIES AT OIL CITY, PA.

OIL CITY, Pa., June 19.—H. B. Robinson, aged 77 years, veteran pipeline engineer, died here, after an illness of over 5 years' duration.

On April 10, 1920, after 42 years of service begun with the New United Pipe Lines in 1878, he retired from active service. He became chief engineer for the New United Pipe Line in January, 1878.. In 1879, he was placed in charge of surveys, plans and construction of the Cleveland Pipe Line, the first long pipeline to be built by the American Transfer Co. Early in 1881, he went to Bradford, then the center of line and tank construction for the National Transit Co. In 1866 and 1887, he had charge of surveys for a gas line to Buffalo and construction of the line in Buffalo.

In 1887, he returned to Oil City which had become the central point for operation for all the National Transit Co. operations. The surveys of the trunk and local gas lines of all the Standard Oil Co. interests were under the immediate direction of Mr. Robinson together with work for the United Fuel Gas Co. in West Virginia.

The first 8-inch pipe line was built through his advice as against a 4-inch line. This survey is now covered by five 8-inch lines. The first accurate estimate of line capacity was made in 1880 for the Cleveland pipeline. In 1885 he was called before the commission appointed by the court of Allegheny County to determine whether the handling of natural gas in cities could be made safe, and against a large amount of testimony was able to convince the commission that it would be made safe, and work in Pittsburgh was allowed to proceed.

Projects involving the construction of pipelines in foreign lands were often discussed with him.

After the dissolution of the Standard Oil Co. in 1912 the services of Mr. Robinson had been confined to the southern group.

He is survived by his widow and the following children: Horace B. Jr., with The Texas Company, Houston, Tex.; Melville W., with Cumberland Pipe Line Co., Winchester, Ky., and Mrs. Benjamin T. Lowers, at home.

IN 1920 the equipment we sent out to cement a well cost only $1,500. Today the cost is over $8,000. The valid patents controlled by us have made it possible for us to spend over $200,000 per year on new improvements and research.

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GASOLINE CONSUMPTION INCREASED 18.8 PER CENT, FIRST FOUR MONTHS

Gasoline consumption the first four months of the year increased 18.8 per cent over the same period of the previous year, according to figures compiled by the American Petroleum Institute. The figures, based on reports by wholesalers and dealers in 32 states having gasoline tax or inspection laws, showed 1,202,881,000 gallons of gasoline were consumed from January to April, inclusive in these states while the consumption the same period of last year was 190,066,000 gallons less, or 1,012,815,000 gallons.

Gasoline consumption during April alone totalled 330,600,000 gallons, compared to 294,187,000 gallons during April, 1925. This represented an increase of 32,413,000 gallons, or 12.4 per cent.

There also was an increase during April of 11.5 per cent over the consumption during March, the daily average consumption during April being 11,020,000 gallons and during March 9,884,000 gallons.

In the following table in addition to the 32 states, consumption figures for the District of Columbia as well as those available for Iowa, Michigan, Nebraska, Ohio, Rhode Island and Wisconsin are shown.

	Month of			4 Mos. End'g With	
	March, 1926 Gallons	April, 1926 Gallons	April, 1925 Gallons	April, 1926 Gallons	April, 1925 Gallons
Alabama	9,441,000	10,599,000	8,232,000	36,975,000	29,804,000
Arizona	2,474,000	2,518,000	2,340,000	9,632,000	8,414,000
Arkansas	6,978,000	8,266,000	6,260,000	29,926,000	22,802,000
Colorado	7,540,000	8,719,000	6,772,000	29,345,000	25,933,000
Delaware	1,286,000	1,031,000	904,000	4,539,000	4,074,000
Florida	28,232,000	25,201,000	14,629,000	106,087,000	58,484,000
Georgia	12,221,000	13,734,000	11,265,000	53,049,000	42,674,000
Idaho	2,537,000	3,992,000	2,221,000	10,050,000	6,302,000
Indiana	20,314,000	20,590,000	20,589,000	76,944,000	73,123,000
Kansas	18,659,000	17,164,000	17,933,000	64,007,000	61,914,000
Kentucky	6,005,000	6,822,000	6,855,000	27,488,000	25,490,000
Louisiana	9,529,000	11,433,000	9,448,000	40,035,000	34,939,000
Maine	1,140,000	2,143,000	3,459,000	5,985,000	7,263,000
Maryland	8,042,000	9,369,000	7,002,000	30,319,000	24,462,000
Minnesota	13,728,000	21,325,000	22,367,000	64,466,000	58,073,000
Mississippi	8,501,000	7,581,000	6,463,000	29,615,000	22,584,000
Missouri	22,625,000	20,267,000	16,717,000	85,777,000	65,064,000
Nevada	745,000	772,000	577,000	2,594,000	2,290,000
New Hampshire	1,195,000	1,837,000	2,446,000	5,499,000	5,584,000
New Mexico	1,619,000	1,852,000	1,369,000	6,438,000	5,847,000
North Carolina	13,482,000	14,062,000	18,810,000	58,658,000	57,784,000
North Dakota	5,088,000	6,662,000	6,178,000	20,255,000	15,213,000
Oklahoma	15,380,000	15,499,000	12,373,000	62,479,000	45,222,000
Oregon	8,157,000	8,820,000	7,219,000	29,624,000	24,673,000
South Carolina	6,868,000	7,730,000	7,966,000	27,169,000	24,602,000
South Dakota	6,188,000	6,527,000	5,930,000	20,900,000	16,416,000
Texas	35,837,000	39,022,000	36,434,000	143,960,000	139,241,000
Utah	2,336,000	2,762,000	1,380,000	9,598,000	7,639,000
Virginia	10,572,000	11,691,000	10,356,000	38,876,000	32,789,000
Washington	14,273,000	15,010,000	12,397,000	50,677,000	42,361,000
West Virginia	4,376,000	6,337,000	6,147,000	17,650,000	16,761,000
Wyoming	1,050,000	1,263,000	1,149,000	4,265,000	4,994,000
Total	306,418,000	330,600,000	294,187,000	1,202,881,000	1,012,815,000
Daily average	9,884,000	11,020,000	9,806,000	10,024,000	8,440,000
Inc'se over prev. yr.: Amount	.....	36,413,000	.....	190,066,000	.....
Percentage	.....	12.4%	.....	18.8%	.....
District of Columbia	3,908,000	4,269,000	3,761,000	14,820,000	12,640,000
Iowa	16,138,000	20,703,000	6,384,000	65,950,000	.....
Michigan	33,095,000	38,710,000	35,390,000	132,374,000	.....
Nebraska	11,778,000	12,656,000	9,955,000	43,193,000	.....
Ohio	45,142,000	51,367,000	.....	168,070,000	.....
Rhode Island	3,376,000	3,914,000	.....	12,718,000	.....
Wisconsin	12,771,000	19,828,000	16,068,000	57,280,000	.....

BIG LAKE ASSESSMENTS ARE BEING PROTESTED

SAN ANGELO, Tex., June 19.—Reagan County Commissioners at Big Lake are being petitioned by attorneys and officials of the Big Lake Oil Co. to reduce greatly the assessed taxable valuation of $11,000,000 placed on the company's properties.

The Texon Oil & Land Co. has been assessed one-half as much as the Big Lake and likewise has protested. Texon controls considerably less acreage in the proven area and has only one-half as much production.

"The assessment against the Big Lake is so excessive as to approach confiscation," said E. C. Stearns, general manager of the Big Lake Co., who explained that last year the company was taxed on a valuation of approximately $300,000 at a rate of $2.40 per $100. This year the company informally rendered $290,000 and suggested that its taxes be doubled.

Mr. Stearns said the Big Lake Oil Co. only wants to be taxed equitably with ranchmen, merchants and others. "Oil companies already pay far more taxes than any other industries," he added. The Big Lake's representative cites that the company has established and maintains a school for Texon, pays the teachers' salaries, receiving neither county nor state aid, provides facilities for various civil functions and polices the field.

HIGHER DUTY IN TUNIS

WASHINGTON, D. C., June 19.—The duty on the importation into Tunis of lubricating oils, heavy oils, and residues of petroleum (other than residues known as gas oil, red oil, etc.) has been increased from 15 to 20 francs per 100 kilos net weight.

RUSSIA REPORTS NEW OIL FIELD IN SIBERIA

The Moscow correspondent of the New York Times says what may prove to be one of the richest oil fields in the world was recently discovered in north Central Siberia, along the banks of the Yenisei River, 300 kilometers from the seat, at a point almost within the Arctic Circle, according to official reports.

Soviet experts already have prospected upward of 200,000 acres producing oil, declaring that the quality is much superior to the Pennsylvania product, and it is believed this is only a small part. Although the approach to the mouth of the Yenisei is now limited to six or seven weeks in the year, the development of the oil field and the seaport would permit traffic for three or four months by the use of icebreakers. The experts assert that comparatively shallow wells would produce gushers.

The Supreme Mining Committee has just issued a series of booklets giving detailed information about a number of less known oil fields, including the region of Ouchkta, about 450 kilometers east-southeast of Archangel, where there is estimated to be 13,700 square kilometers of oil-bearing land. The second region is Kertch Taman in northeast Crimea, and the third region, Fregani, is in the extreme south Usbegistan, on the borders or Arghanistan and Chinese Turkestan.

PIPE LINE VALUATIONS

CHICAGO, June 19.—Valuation of Indiana Pipe Line Co. for taxation purposes has been increased $48,000 by the Indiana Board of Tax Commissioners to $6,600,000. Other valuations fixed were Tide Water Pipe Line Co., $925,000, increase of $200,000, and Sinclair Pipe Line Co., $212,000, decrease of $11,050.

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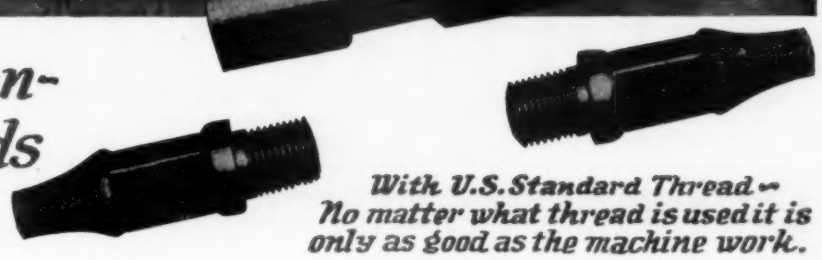

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Our extensive facilities for the production and transportation of Liquid Chlorine enable us to give the best of Service to all refiners using our process. We also produce and market direct to the petroleum industry the following standard chemicals: Caustic Soda, in solid form and in tank cars of liquid solution containing 50% of Sodium Hydroxide; Bicarbonate of Soda, for all foam type fire extinguishers; Bleaching Powder, sometimes used in making up Hypochlorite solutions; Soda Ash, Anhydrous Ammonia and Aqua Ammonia.

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COLOR BLIND FEATURE WRITERS SEE ONLY RED IN PANHANDLE OIL TOWNS

By J. L. Dwyer

AMARILLO, Tex., June 19.—A man who was color blind and a man with normal vision stood watching a green traffic light. The man who was color blind said that the light was red, and the man with normal vision insisted that the light was green.

A crowd gathered as the argument progressed, and each claimant stated his theories as to the color of the light. Among the crowd were many of normal vision, and a few who were color blind. When the argument was finished, the members of the crowd who were color blind believed that the light was red; and the members who had normal vision were sure that the light was green.

With the great Texas Panhandle Field booming along, there must be numerous towns mushroom up over night. In the establishment of these towns there naturally centers a certain percentage of undesirable characters. These characters are not confined to the oil field towns, but may be located in a section of any city in the United States.

Imagination Runs Riot

When the boom is running rampant, there are invariably several "sob writers" sent by their respective papers to the scene of activities. Lurid accounts of scenes which savor of Cripple Creek days are the result of the fertile imaginations of these writers. For many of them it is the first trip into an oil field a'borning. They, if you please, are the counterparts of the men who are color blind.

We who are of the oil fields and who "speak the language" resent these ideas being instilled into that portion of the public who are color blind at least to real conditions in an oil field town. We who have "bucked the wrenches" on the pipeline and "put up the beam," feel keenly, that only the undesirable side of the oil field towns is brought to the attention of the readers of several daily papers.

Old Story to Oil Men

We who have carried a dinner pail cannot help but become disgusted with the utter piffle, and bunk, and innumerable exaggerations, which find their way into the ramblings of writers who attempt to portray the boom towns and who purport to give true accounts of their citizens. We who have passed through the experiences of 8 or 10 boom towns most certainly feel that in regarding these towns we have normal vision; although the sob writers would probably state that we suffer from moral astigmatism.

The town which has been most offended against in the daily papers and other periodicals not connected with the oil industry is Borger, Tex., in the heart of the Panhandle. It is to this place that the nimble reporters flocked, and their typewriters have reported only what they wished to report. They did not carry a full account of the activity, nor is it likely that they pondered over the fact that all this excitement and rush to complete wells; all the annoying hardships of living in a mushroom town with its inconveniences was for their comfort, and was being done in order that they might drive up to a filling station and have their flivvers filled with gas and oil.

Borger, Tex., is an oil field town. It is Cushing, Cromwell, Davenport, Bald Hill, Wetumka or dozens of other places transported. It is no better and no worse than any of the places mentioned. Vice is present, but certainly is not rampant. A girl is safer in the limits of this little town than she would be in the dance halls of the city in which the accounts were printed. She would obtain greater protection from one of the roughnecks or drillers than from the "pharmacy rangers" or drug store cowboys who roam the streets of the city. In the Club Cafe at Borger one may obtain a meal which compares very favorably with the cuisine offered by a restaurant in any city.

Borger today boasts 8,000 inhabitants and 60 days ago there were not two sticks of lumber on its mile long main street. In traversing the main drag one runs all the gamut of human emotions. To the credit of Borger like all oil field towns it must be recorded that a sharp demarcation is made between the good and the bad. Like water, one finds ones own level in Borger, and quickly assumes ones place in the stratum of society in which one belongs. One may mingle with the dance hall girls at Pa Murphy's place or visit with friends whom one knew in Oklahoma fields.

Before the coming of the law, Borger displayed a certain amount of outlawry. A certain element which is always ready to take advantage of the weak, preyed upon their victims, mindful that without the strong arm of the law they had little to fear. The coming of two Rangers or Texas State police, stopped the hijacking overnight. Borger now has its chain gang and offenders quickly win their place handcuffed to the 30-foot chain.

Borger has its quota of respectable folk. The good women of Borger have little time for the social intricacies which play such an important part in the lives of their sisters in the city. Instead of the continuous rounds of bridge, they are busily engaged in the more arduous duties of keeping house and assisting their husbands.

While at this town it was the writer's privilege to see several children (now fairly well grown) who had been born in other oil field towns. Children born of radiant motherhood. Children with sturdy limbs and sunburned cheeks; fine specimens of young America.

Borger will be free from epidemics. Should a misguided germ be careless enough to locate there, the velocity of the wind sweeping across the flat lands would blow it clear into Colorado before it could regain its feet. By the same token, housekeeping will be simplified for all that will be necessary will be to open the doors, the wind will do the rest.

Borger's Serious Fire

On Tuesday of this week a fire broke out in the Rex Theater, in Borger, which at the time was giving a matinee performance attended by many children. The little ones were gotten out in safety, but the fire spread and the high wind carried the flames to nearby buildings. Before the fire was placed under control a considerable part of the business section of the town was in flames. The work of clearing away debris was begun as soon as the ashes cooled and in a short time the burned district will be completely rebuilt.

FRENCH OIL IMPORTS MORE FIRST QUARTER

By Charles E. Kern

Washington Bureau,
The Oil and Gas Journal

WASHINGTON, D. C., June 19.—Imports of petroleum products into France during the first three months of 1926 totaled 553,000 metric tons, compared with 425,000 metric tons in the corresponding period of 1925, according to Trade Commissioner Daniel J. Reagan, Paris.

With the exception of petroleum, increases occurred in all products, and were most marked as regards lubricating oils and petroleum residues, the receipts for the former showing an advance of 80 per cent and the latter 125 per cent. Kerosene and gasoline showed normal increases.

French imports of gasoline totaled 255,714 metric tons compared with 237,632 metric tons in the similar period of 1925. Receipts of lubricants amounted to 111,495 metric tons against 61,516 metric tons in last year's period. Kerosene imports rose to 84,779 metric tons from 80,646 metric tons and imports of residues increased to 89,125 metric tons from 39,519 metric tons.

The G-Boy Scores a Genuine Triumph

The enthusiastic welcome given the G-BOY, Graham Brothers new one-ton truck, has established this fact:

It is recognized at once as a real—a major—contribution to commercial haulage.

Revolutionary improvement in balance effected by a new system of weight distribution, compact wheel base, ease of handling, generous body capacity, advantages of the ever dependable and always economical Dodge Brothers engine—all these important factors enter into the G-BOY'S marked success.

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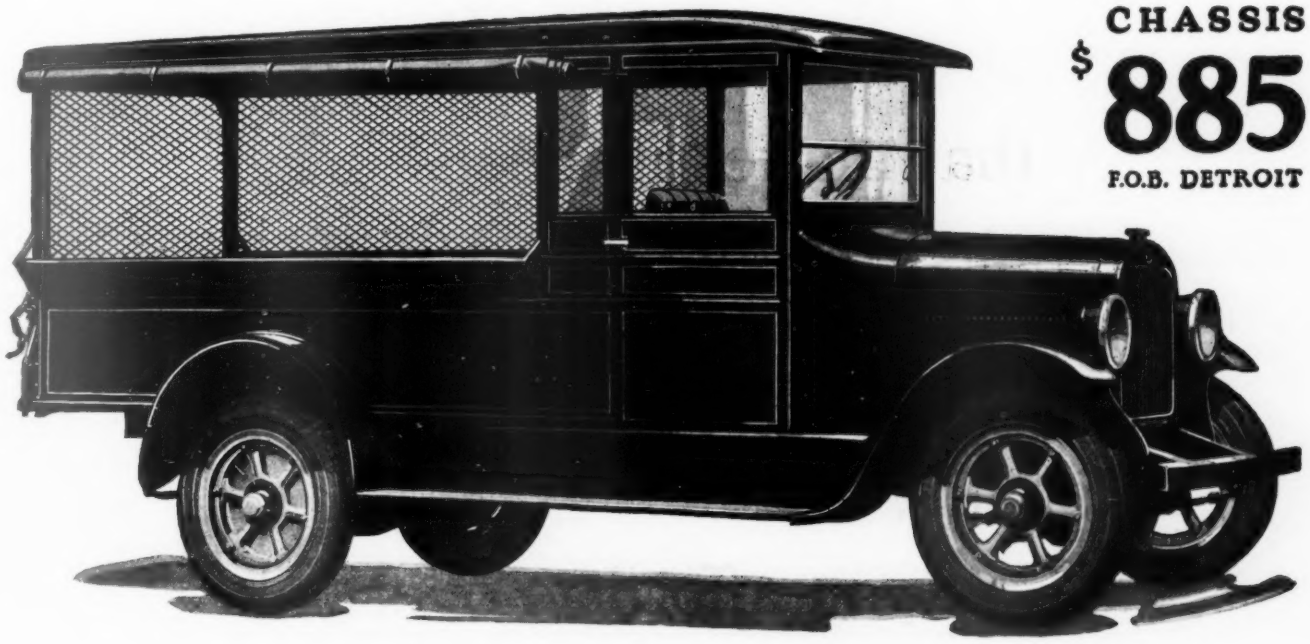

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N. LOUISIANA-ARKANSAS

(Continued from Page 52)

ern's No. 2-B Grayling, Section 32-21-4e. Ruston Drilling Co.'s No. 2 Parks, Section 30-20-4e, is drilling below the 1,600-foot level.

Webster Parish

Near Sulphur Springs and southeast of Cotton Valley, Magnolia Petroleum Co.'s No. 1 Bible, Section 8-20-9, was junked at 4,281 feet. Humble Oil & Refining Co.'s No. 2 R. R. Cox, Section 22-21-10, is drilling in rock at 746 feet. Magnolia's No. 2 Turner, Section 21-21-10, is drilling through lime at 2,447 feet. Ohio Oil Co.'s No. 1 W. Cox, Section 23-21-10, is drilling in shale at 5,478 feet. Ohio's No. 3 Holloway, Section 23-21-10, is going through lime at 3,843 feet. Drilling is being delayed at 1,000 feet at Ohio's No. 7 Sidney Heirs, Section 16-21-10, while the drill stem is being fished out. Smitherman & McDonald's No. 1 Oakley, Section 29-33-11, is going through shale and lime at 4,367 feet. Southern Crude Oil Purchasing Co. and Ramsey's No. 1 Munn, Section 1-22-10, failed to uncover anything around the 3,350-foot level and is drilling ahead in lime at 3,583 feet.

Winn Parish

Cedar Creek Petroleum Co.'s No. 1 Sullivan, Section 6-10-2w, is shut down at 1,700 feet. Humble Oil & Refining Co.'s No. 1-B William Edenborn, Section 1-9-3w, is drilling in gumbo at 2,000 feet. Location has been made for Humble's No. 8 L. & A., 990 feet north and west SE cor. Section 15-10-2w, and for No. 10 L. & A., 1,320 feet north and west SE cor. Section 13-10-2w. Hunt and associates' No. 1 Edenborn, Section 8-9-3w, is shut down in rock at 1,250 feet for orders. Keene & Woolf's No. 1 Radescich, Section 21-12-3w, is being reamed to the bottom at 1,530 feet. Ohio Oil Co.'s No. 1 Edenborn, Section 4-12-1w, is a derrick. C. H. Wilson's No. 1 Louisiana Central, Section 24-13-1e, is drilling in rock at 1,600 feet.

Scattered Wildcats

Another of the wildcat failures was El Dorado Chief Oil Co.'s No. 1 Rodgers, Section 8-14-3w, Jackson Parish, which tested salt water at 939 to 1,013 feet and was abandoned at 1,760 feet. In Catahoula Parish S. B. Goodman's No. 1 Montgomery, Section 8-10-9e, is drilling at 1,110 feet. In Lincoln Parish Arkansas Fuel Oil Co.'s No. 1 Cooper, Section 3-20-4w, is shut down at 500 feet for water. Bannon and associates' Madison Parish test, No. 1 Yerger, Section 51-16-14e, is drilling at 600 feet. Natchitoches Parish has three wildcats drilling. S. E. Davidson and associates' No. 1 Guellat, Section 47-7-5, is setting 10-inch at 95 feet. Forrest's No. 1 Ayers, Section 3-13-7, is drilling in gumbo at 900 feet. J. F. Palmer's No. 1 Edenborn, Section 4-11-6, is drilling in shale at 1,970 feet. J. B. Greer's No. 2 Peavy-Wilson, Section 11-5-9w, in Sabine Parish, is being rigged. A rig is up for Toro Petroleum Co.'s No. 1 Wyatt Lumber Co., SE NW SE, Section 19-4-11, Sabine Parish. In Union Parish, Arkansas Fuel Oil Co.'s No. 1 James Reeves, Section 14-20-1e, cored sandy lime and shale at 3,597 feet.

Arkansas—Union County

Leading the short string of new producers in Lisbon was Pure Oil Co.'s No. 1-E Harrell, Section 4-17-16, which came in flowing and swabbing 200 bbls. daily from sand at 2,115-38 feet. Rovenger Oil Corp.'s No. 2 Harrell, Section 15-17-16, was put on the pump and made 20 bbls. from sand at 2,116-52 feet. Southern Crude Oil Purchasing Co.'s No. 2 Slaughter, Section 3-17-16, is making 37 bbls. on the pump from sand at 2,088 to 2,107 feet. In the extreme northern end of the pool H. L. Hunt's No. 1 H. O. Murphy, Section 4-17-16, was completed for a 12-bbl. pumper in sand at 2,084 to 2,120 feet. Miller & Cottingham's No. 6 Slaughter, Section 9-17-16, is making 75 bbls. on the pump from sand at 2,092 to 2,117 feet. Magnolia Petroleum Co.'s No. 6 Slaughter, Section 9-17-16, was finished in sand at 2,092 to 2,117 feet and flowing 100 bbls. daily through 2-inch tubing.

Six-inch casing was set at 2,105 feet at Allday Drilling Co.'s No. 2 Murphy, Section 4-17-16, and the test is being swabbed to test 34 feet of broken sand topped at 2,131 feet. No. 3 Murphy CEL SW NE, Section 4, is a rig. Atlantic Oil Producing Co.'s No. 7-B Andress, Section 16-17-16, is a rig and No. 8 has 500 feet of oil in the hole from sand at 2,115-33 feet and is waiting for a standard rig. Atlantic's No. 4 Goodwin, Section 16-17-16, is drilling at 1,880 feet. Eason and associates' No. 1 Mooty, Section 22-17-16, is setting surface casing at 52 feet. Surface casing was set at 199 feet at Gulf Refining Co.'s No. 1 Primm, Section 21-17-16. O. L. Hickman and associates' No. 1 Slaughter, SW NE SW, Section 3-17-16, failed to uncover deep sand production in Lisbon and arrangements are being made to abandon the test at 2,951 feet.

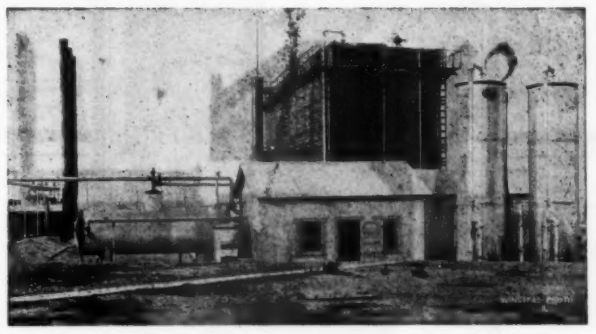
Six-inch casing was cemented at 2,115 feet at Humble's No. 1 Goodwin, Section 16-17-16, and at 2,085 feet at No. 6 Goodwin. A derrick is up for Humble's No. 7 Goodwin, NW SE SW, Section 16-17-16, and another derrick is up for No. 8, SW SE SW. Humble's No. 3 Slaughter, Section 10-17-16, has 500 feet of oil in the hole from sand at 2,087 to 2,108 feet and is waiting for a standard rig. H. L. Hunt's No. 2 H. O. Murphy, SE cor. NW NE, Section 4-17-16, is a derrick pattern and casing was set at 2,070 feet at No. 5 Murphy and the hole is being swabbed to test 79 feet of broken sand topped at 2,070 feet. Keisker and associates' No. 1 Harrell, Section 15-17-16, is in sand at 2,096 to 2,153 feet and is waiting for a standard rig.

Lion Oil's Operations

A derrick is being built for Lion Oil & Refining Co.'s No. 2-A Dumas, NW cor. SW NW, Section 10-17-16. Lion's No. 9-A Mitchell, Section 17-17-16, is being swabbed to test sand at 2,125-45 feet and a derrick pattern is on location for No. 12-A Mitchell, SE cor. NE SE, and No. 1-C Mitchell, SE cor. Section 17-17-16, is a location. Six-inch casing was cemented at 2,043 feet at Magnolia's No. 2 Dumas, Section 9-17-16, and No. 6 Dumas is being swabbed to test 42 feet of broken sand topped at 2,086 feet. Six-inch casing was cemented at 2,075 feet at Magnolia's No. 2 Harrell, Section 4-17-16; No. 3 Harrell is a rig; No. 4 Harrell, NE cor. NE SE, is a derrick, and No. 5 Harrell, CWL NE SE, is drilling at 229 feet. Magnolia is attempting to extend production into Section 8-17-16, and has a derrick up for No. 1 J. Slaughter, NE cor. SE SE.

Natural Gas & Fuel Corp.'s No. 2 Willett, Section 4-17-16, is drilling at 1,893 feet; No. 3 Willett at 1,360 feet, and No. 4 Willett at 700 feet. Ohio's No. 3 Goodwin, Section 21-17-16, has 400 feet of oil in the hole from sand at 2,112-37 feet, and is waiting for a standard rig. Six-inch casing was cemented at 2,109 feet at Ohio's No. 4 Goodwin, and a derrick is up for No. 6 Goodwin, SW cor. SW NW, Section 21-17-16. Six-inch casing was cemented at 2,110 feet at Pure Oil Co.'s No. O-A Harrell, Section 4-17-16; a derrick is up for Pure's No. 3-M Harrell, 200 feet south and 578 feet west NE cor. NW SE, Section 4-17-16; No. 1-N Harrell, Section 4-17-16, has 300 feet of oil in the hole from sand at 2,120-60 feet and is waiting for a standard rig, and 6-inch casing was cemented at 2,105 feet at No. 2-N Harrell. Six-inch casing was cemented at 2,094 feet at Reynolds & Marr's No. 2 Goodwin, Section 21-17-16.

A derrick is up for Rovenger Oil Corp.'s No. 7 Dumas, SE cor. SW, Section 9-17-16. Rovenger's No. 6 Goodwin, NE cor. NW NW, Section 16-17-16, is a derrick. Rovenger's No. 2-B Goodwin, Section 16-17-16, is waiting for 6-inch casing to set at 2,085 feet; a derrick is standing for No. 3-B Goodwin, SW cor. SW NW, Section 16-17-16, and No. 4-B Goodwin, NW cor. SW NW, same section, is a derrick. Rovenger's No. 3 Harrell, Section 15-17-16, is drilling at 1,420 feet. Six-inch casing was cemented at 2,082 feet at Roxana's No. 6 Flournoy, Section 4-17-16. Simms Oil Co.'s No. 8 Perry, Section 16-17-16, is waiting for 6-inch casing to set at 2,013 feet. South-



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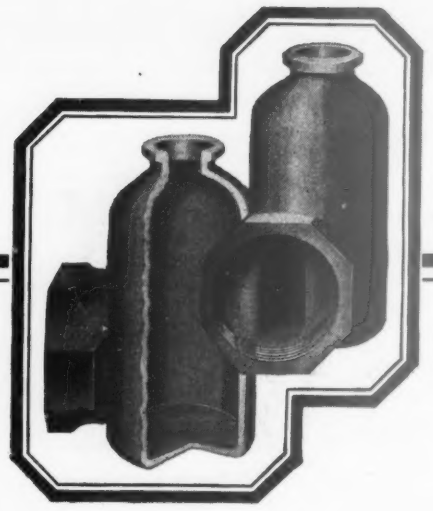

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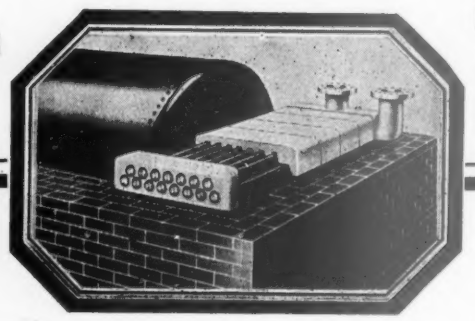


Kansas City, Mo.

ern Crude Oil Purchasing Co.'s No. 3 Slaughter, Section 3-17-16, is drilling at 2,065 feet and Southern's No. 1 Tooker, NE cor. SW SW, Section 3-17-16, is an abandoned location. Summerfield and associates' No. 1 Jackson, Section 17-17-16, is drilling at 890 feet. Wingfield and associates' No. 1-B Slaughter, Section 3-17-16, has 500 feet of oil in the hole from sand at 2,095 to 2,122 feet and is waiting for a standard rig; a derrick is up for No. 2-B Slaughter, NW cor. NW SW.

Smackover finished the week with a dismal completion report. In Union County only four tests were completed, two for small producers and two failures, one in deep sand. Sunny Jim Oil Co.'s No. 7-A Lawton, Section 10-16-15, is making 60 bbls. of fluid, 25 per cent salt water, from sand at 2,588-94 feet. Sam Cook's No. 8 Tatum, Section 7-16-15, was finished in sand at 2,561-63 feet, pumping 20 bbls. of fluid, 5 per cent salt water. Leo P. Pukrul's No. 2 Smith, Section 17-16-15, was abandoned at 2,030 feet with the casing in the hole. Lion Oil & Refining Co.'s wildcat test, No. 1 Coombs, Section 25-18-16, was dry and abandoned at at 3,015 feet.

Amerada Petroleum Corp.'s No. 7 Calloway, Section 4-16-15, is drilling at 2,275 feet. F. A. Book's No. 1 McDonald, Section 1-16-16, is drilling at 2,532 feet. Broderick & Calvert's No. 7-B Murphy, Section 8-16-15, tested 500 feet of salt water at 2,687-88 feet and arrangements are being made to core formations a few feet deeper. G. J. Child's No. 3 fee, Section 8-16-16, has 1,000 feet of oil in the hole from sand at 2,593 to 2,602 feet and is waiting for a standard rig. Drilling is being held up at Eason and associates' No. 9 Murphy, Section 15-16-15, until the bit is fished from the hole at 1,250 feet. Federal Petroleum Co.'s No. 3 Murphy, Section 15-16-15, is drilling at 2,460 feet. Garrett and associates' No. 1 Ford, Section 30-19-14, is drilling in shale at 2,360 feet.

Gaughan & Sifford's No. 1 Parks, Section 28-16-16, is drilling at 3,028 feet. Grimes aand Jones' No. 1 Alphin, Section 6-18-14, is drilling at 1,400 feet. Gulf Refining Co.'s No. 21 Murphy, Section 9-16-15, is drilling at 2,105 feet. Drillers are milling on the bit at 2,197 feet at F. C. Henderson's No. 2 Fitzgerald, Section 8-18-15. Six-inch casing was cemented at 2,567 feet at Hollayfield and associates' No. 13 Giller, Section 10-16-15, and Howell and Knowles' No. 2 Springer, Section 36-17-16, has been temporarily abandoned at 2,592 feet. Humble Oil & Refining Co.'s No. 6-B Flenniken, Section 9-16-15, is drilling in sand at 2,375 feet. Humble's No. 2-B Lawton, Section 7-16-15, is being reamed to the bottom at 2,734 feet.

Casing Cemented

H. L. Hunt's No. 2 Swilley, Section 28-16-16, had the top of the sand at 2,701 feet and casing cemented at 2,697 feet; No. 3 Swilley, Section 27-16-16, is drilling at 2,442 feet. A derrick is up for No. 4 Swilley, SE cor. NE NE, Section 28-16-16. Imperial Oil & Gas Co.'s No. 1 Goodwin, Section 26-17-16, is coring at 2,495 feet. E. M. Jones' No. 1 Foster, Section 19-16-16, is drilling at 2,040 feet. Location has been made for Jones and Murphy's No. 1 Loutre Shingle Co., SW cor. NW SW, Section 5-19-14. Same operators' No. 1 McDonald, Section 27-19-16, is drilling at 1,580 feet, and a derrick is up for their No. 1 Union Saw Mill Co., SE cor. NW NE, Section 27-19-14. Kennebrew and associates' No. 7 Williams, Section 3-16-15, is waiting for a standard rig at 1,975 feet.

Lion Oil & Refining Co.'s No. 8 Flenniken, Section 10-16-15, is flowing 100 bbls. daily by heads from sand at 2,676-80 feet and the sand is being cored at 2,783 feet. Location has been staked for Lion's No. 8-A Mitchell, SE cor. SE NE, Section 17-17-16. Magnolia's No. 5 Tatum, Section 7-16-15, was junked at 2,631 feet and the derrick skidded 30 feet west. Magnolia's No. 1 Childs, Section 8-16-16, tested sand at 2,599-2,604 feet and found a showing of oil and is drilling deeper in the sand. A derrick is up for Magnolia's No. 2 Childs, SW SE NE, Section 8-16-16. McGaha and associates' No. 1 Haney, Section 11-17-16, is drilling in broken lime at 2,770 feet. Six-inch casing was cemented at 2,347 feet at Murdock and associates' No. 8 Hays, Section 4-16-15. The drilling stuck at 2,743 feet at Murdock and associates' No. 7 Vestal, Section 17-16-15, and total depth of the hole is 2,758 feet.

Arrangements are being made to deepen Ohio Oil Co.'s No. 3 Ballard, Section 14-16-15, which was completed at 1,982 feet pumping 50 bbls. A derrick is up for Peer Oil Co.'s No. 6 Palmer, SE SW, Section 9-16-15. Sand was cored at 2,676 feet at A. H. Ramage's No. 1 fee, Section 27-16-16, and casing was cemented at 2,672 feet. Sam Richardson's No. 2-M Murphy, Section 14-16-15, is a derrick. Simms Oil Co.'s No. 3 Murphy, Section 15-16-15, is drilling at 1,200 feet. A derrick is up for Simms' No. 1 Simmons, NW cor. NE SE, Section 9-18-13. Southern Crude Oil Purchasing Co.'s No. 1 Rumph, NE cor. NW SE, Section 8-16-16, is a derrick. Southern's No. 4-A Wells, Section 15-16-15, is drilling at 1,075 feet. Sun Oil Co.'s No. 9 Brown, Section 8-18-15, is coring at 2,746 feet. Sure Oil Co.'s No. 5 Murphy, Section 15-16-15, is a rig.

Ouachita County

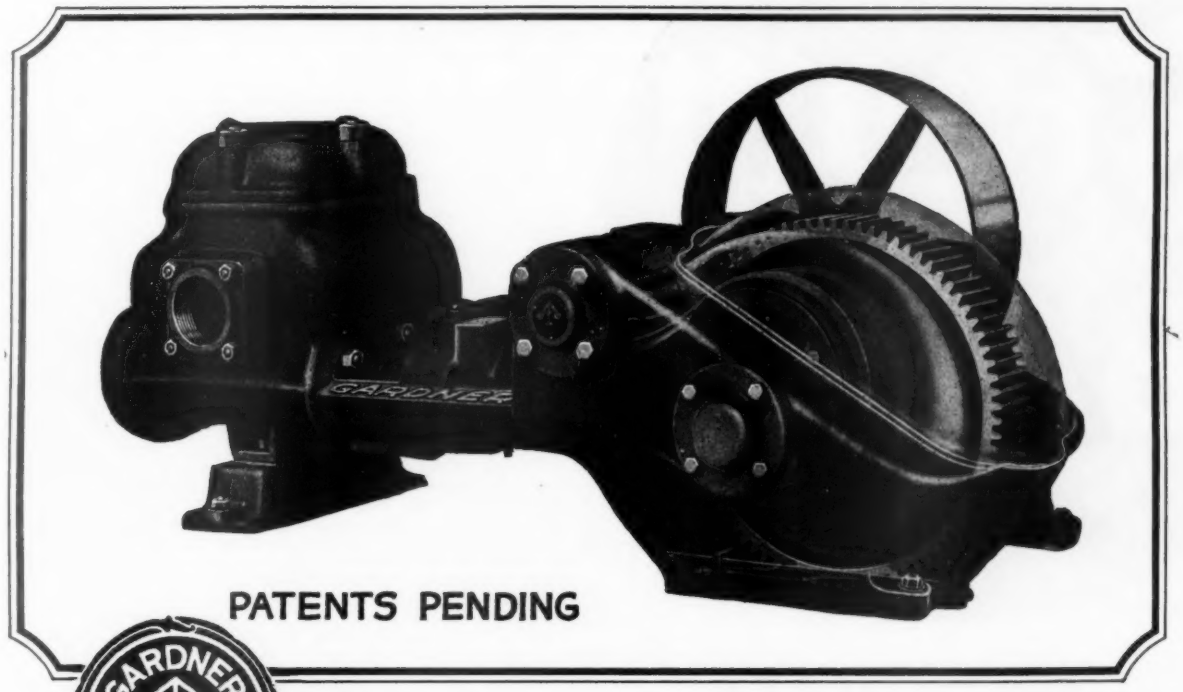
Ouachita County's contribution to Smackover last week was a 10-bbl. pumper, El Dorado Union Oil Co.'s No. 1 Hall, Section 31-15-19, which was completed in sand at 2,171-93 feet. H. M. Harrell's No. 2 Moline Timber, Section 17-12-17, cored salt water sand at 1,833 feet and is drilling at 1,839 feet. Testing sand at 2,763-88 feet at Humble's No. 11-B Arnold is being delayed while 4½-inch casing is being fished out. A derrick is being built for Humble's No. 10 Hildebrant, CWL SW SW, Section 28-15-15. Imperial Oil & Gas Co.'s No. 4 McClanahan, Section 6-16-15, is drilling at 2,100 feet. No. 4 was completed early in 1923, flowing 6,000 bbls. at 1,993 feet. The casing was bailed dry and Magnolia's No. 4-B Rhoten, formerly No. 1-B, Section 32-15-15, is being bailed to test sand at 2,579-86 feet. A. Meek's No. 1 Clawson, Section 35-15-17, is drilling at 800 feet.

Ohio Oil Co.'s No. 8 Goodwin, Section 29-15-15, has 800 feet of oil in the hole from sand at 2,599-2,608 feet and is waiting for a standard rig. A derrick is up for Ohio's No. 14 Mullen, NE cor. SW SW, Section 27-15-16. Phillips Petroleum Co.'s No. 1 Tate, Section 9-14-17, is drilling at 2,710 feet. J. D. Reynolds' No. Ratch and Cartier, Section 2-14-18, is drilling in red shale at 2,450 feet. Roxana Petroleum Corp.'s No. 6 Berg, Section 28-15-15, is drilling at 1,460 feet. Smith Drilling Co.'s No. 3 Shirey, Section 36-15-17, is shut down at 2,290 feet waiting for casing. Six-inch casing was cemented at 2,596 feet at Standard Oil Co.'s No. 9 Murphy, Section 29-15-15. Sun Oil Co.'s No. 6 Hardin, Section 27-15-16, is being bailed to test broken formations at 2,250 feet. Sunny Jim Oil Co.'s No. 1 Hicks, Section 27-15-16, tested salt water in sand at 2,264-80 feet and arrangements are being made to abandon the test at 2,284 feet. A rig is up for The Texas Company's No. 17 Berry, Section 33-15-15, and the same company's No. 7 Neeley, Section 27-15-16, has 300 feet of oil in the hole from sand at 1,998-2,035 feet and is waiting for a standard rig.

In the Stephens district, Arco Oil Co.'s No. 1 Davis, 660 feet east and 150 feet north SW cor. NW SE, Section 22-15-19, is a derrick. Louisiana Oil & Refining Corp.'s No. 2 Green, Section 22-15-19, is drilling in gumbo at 1,000 feet. Magnolia Petroleum Co.'s No. 3 Watson, Section 31-15-19, is drilling at 1,100 feet. Reynolds and associates' No. 1 Holton, Section 15-15-19, is drilling at 900 feet.

Columbia County

Two small pumpers were completed in the Stephens Field. Goren and associates' No. 1 Jones, Section 36-15-20, was finished in sand at 2,206-16 feet pumping 12 bbls. daily, and Gorden and Powell and Dickson's No. 2 Jones, Section 36-15-20, is pumping 15 bbls. daily from sand at 2,183-93 feet. R. W. Aarnes' No. 2 Brown, Section 13-15-20, tested dry with a show of oil and salt



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water at 3,327 feet. The liner is being pulled and the hole is to be deepened. Six-inch casing was cemented at 2,189 feet at Gorden, Powell and Dickson's No. 3 Jones, Section 36-15-20. A derrick is up for the same operators' No. 8 Jones, SE cor. NE NE, Section 1-16-20. Haynesville Trust Co.'s No. 1 Wingfield, Section 18-19-19, is drilling at 2,350 feet.

Nevada County

Two failures were abandoned and one gas well was completed in Nevada County. Humble Oil & Refining Co.'s No. 1-C Graves, Section 9-15-22, was completed for a 20,000,000-foot gas well in sand at 1,090-1,110 feet. Zing and associates' No. 1 Blakely, Section 27-13-20, tested salt water sand at 1,228 feet and was abandoned. W. F. Furen and associates' No. 1 Whitehead, Section 27-13-21, also tested salt water at 1,269 feet and was abandoned.

Autrey Oil Co.'s No. 3 Womack, Section 10-14-21, had sand at 1,133-38 feet, and 6-inch casing is being cemented on top of the sand. Humble Oil & Refining Co.'s No. 4 Bodcau, Section 10-14-21, topped the Nacatoch sand at 1,193 feet and found a show of dead oil and the test is drilling ahead at 1,316 feet. Webb and associates' No. 1 Haynie, Section 1-14-21, had the sand at 1,121-24 feet and 6-inch casing is being set at 1,117 feet.

Scattered Wildcats

One oil well and one failure were chalked up in the Bradley Pool in Lafayette County. Arkansas Fuel Oil Co.'s No. 3 Allen, Section 18-19-24, is pumping 150 bbls. of oil and 450 bbls. of salt water from sand at 2,779-82 feet and Arkansas' No. 4 Red River, same section was dry and abandoned at 3,069 feet. Arkansas' No. 4 Allen, 300 feet north and west SE NE SW, Section 18-19-24, is a derrick pattern. Bostic Drilling Co.'s No. 1 Frazier, Section 8-18-24, topped the Nacatoch sand at 1,833 feet and is in 2 feet. Gulf Refining Co.'s No. 1-E Red River, Section 10-19-24, has spudded. In Miller County, Lenze and associates' No. 1 Dale, Section 25-15-26, was abandoned at 2,642 feet. The Texas Company's No. 1 Colvin, 200 feet south and east NW cor. NE, Section 14-17-24, Lafayette County, is a rig. Ten-inch casing was set at 270 feet at Greason and associates' No. 1 Waldrop, Section 4-13-31, Little River County. In the same county, Mellick Oil Co.'s No. 1 Hawkins, Section 10-11-31, is drilling in shale at 1,600 feet. Magnolia Petroleum Co.'s Bradley County test, No. 1 Arkansas Timber Co., Section 33-15-11, is rigging. Haley and associates' No. 1 Moore, Section 29-9-10, Cleveland County, is drilling at 2,490 feet.

GULF COAST FIELDS

(Continued from Page 44)

No. 2 Bordages there is drilling around 3,655 feet.

Drilling in the Pools

The Oil and Gas Journal is the only trade publication in the country carrying a complete weekly report of wells drilling in the pools and the depths. Down here we have no designated sands, such as "lime," Woodbine, etc., as are found in other fields at nearly uniform depths. Geologists speak of sands in technical terms having reference to age and depths, but these mean little or nothing to the average layman. He does know, however, that production was found at certain depths in various pools; that the 8¼-inch casing was set at a certain depth and the 6⅝-inch at another and how much strainer followed. With this information he is enabled to drill more intelligently. Therefore, a knowledge of the depths of drilling wells and the formations where it is possible to give them, are very useful to operators or those who direct drilling operations.

Hardin County Pools

Paggi & Co.'s No. 43 Queen City at Saratoga is drilling at 750 feet. Rio Bravo Oil Co.'s No. 5 Fountain is down 4,300 feet, set casing at 3,950 feet; No. 5 Cotton is rigging up.

In the Batson Pool

The Buchanan Oil Co.'s No. 88 Milholme is drilling at 1,000 feet. Gulf Production Co.'s No. 61 Choate is drilling at 550 feet; No. 168 Wing is drilling at 650 feet. East Batson Oil Co.'s No. 13 State land is drilling at 1,200 feet. Paraffine Oil Co.'s No. 66 Paraffine set casing at 950 feet.

In the Sour Lake Field Falloure, Ebbert and Hebert's No. 3 Jackson is drilling deeper. Orange Petroleum Co.'s No. 1 Merchant is rigging up. Peveto Oil Co.'s No. 1 Lynn fee is drilling at 800 feet. Yount-Lee Oil Co.'s No. 4 Gilbert is drilling at 4,025 feet; No. 1 Lynn at 3,400 feet. J. F. Bashara's No. 1 fee is drilling at 1,000 feet. Humphrey Corp.'s No. 2 Bashara is drilling at 1,300 feet; No. 1, at 200 feet. Sun Oil Co.'s No. 1 Libbie is drilling at 4,175 feet.

South Liberty

Humble's No. 2 Welder, at South Liberty, is drilling at 3,200 feet. The Coastal Oil Co.'s No. 1 Lecoure is drilling at 2,925 feet. Premium Oil Co.'s No. 1 Mitchell started drilling.

At High Island, Sun Oil Co.'s No. 8 Cade "C" is drilling at 3,925 feet; No. 10 set casing at 3,500 feet. Gulf Production Co.'s No. 5 George E. Smith, drilling at 4,000 feet; No. 2 G. E. Smith "A", drilling at 400 feet. Paggi Brothers and others' No. 1 Jackson is drilling at 1,900 feet.

The Texas Company's No. 4 Abrams, at West Columbia, is drilling deeper at 2,800 feet.

Abercrombie and others' No. 1 West-Schenck, at Blue Ridge, is drilling at 2,825 feet. Gulf Production Co.'s No. 7 Bassett Blakeley "B" is drilling at 3,400 feet. Blue Ridge Oil & Gas Co.'s No. 1 Robinson is a location.

Rio Bravo Oil Co.'s No. 3 Settegast, at Pierce Junction, is a derrick. Navarro Oil Co.'s No. 3 Cain is drilling at 2,000 feet. Gulf Production Co.'s No. 18 Taylor is drilling at 3,125 feet; No. 11 will deepen.

Gulf Production Co.'s No. 11 Wheat and others, at Big Creek, is drilling at 3,500 feet; No. 26 Davis is drilling at 3,250 feet; No. 29 is drilling at 3,550 feet, and at Long Point, No. 11 J. H. P. Davis is drilling at 825 feet, and No. 12 at 850 feet.

Gulf Production Co. is rigging No. 7 Moore at Orchard Dome in Fort Bend County, northwest of Rosenburg, where it now has producing wells.

In the Humble Pool, Barclay and Meadows have rigged No. 6 Burt. L. B. Hancock is drilling No. 2 Dannebaum, the Cardinal Oil Co. No. 2, and the H. & W. Oil Co. No. 2 Bailey. V. G. Cahill has rigged No. 2 Rosenthal. Sun Oil Co. is drilling No. 32 River.

In the Goose Creek Pool, Gulf Production Co.'s No. 12 Chapman-Bryan is below 3,235 feet. No. 7 Wright is at 3,610 feet, and No. 33 Beaumont is below 3,455 feet. No. 8 State land is around 2,980 feet, and No. 18 Smith is at 2,345 feet. Humble Oil & Refining Co.'s No. 68 Smith is drilling deeper at 4,475 feet. No. 69 is at 1,100 feet. No. 12 Peninsula is working over, and No. 17 is rigging. Sun Oil Co. is working over No. 6 Wright. The M. & B. Oil Co.'s No. 4 Scorrgea is drilling northwest of production, around 4,200 feet.

At Nash Dome, on the line of Fort Bend and Brazoria Counties, the Rycade Petroleum Corp.'s No. 3 Flessner is at 4,285 feet, the deepest test to date there. This is the pool controlled entirely by the Rycade Corp. by virtue of its having all the available acreage, some 11,000 acres, under lease. No. 7 Wisdom is at 1,235 feet in gyp and anhydrites, and No. 8 Wisdom is at 565 feet in gumbo. No. 8 Nash is at 1,345 feet in hard sand, and No. 9 Nash is a derrick.

Hull and Orange Pools

In the Hull Pool, on the Dolbear 800-acre lease on the east side of the dome, the Republic Production-Houston Oil Co.'s joint No. 126 is at 2,345 feet. No. 128 is at 2,235 feet. No. 130 is around 2,455 feet. No. 131 is at 2,045 feet. The Humble Oil & Refining Co. is increasing its operations in that pool. A derrick is up for No. 22 Guedry. No. 23 is drilling around 2,370 feet. No. 1 Lynn is rigging. A location has been made for No. 1 Bevers. No. 6 Marshall is rigging. The Texas Company's No. 2 Hannah is

at 1,556 feet. Texas-Vacuum Oil Co.'s joint No. 2 Hannah is at 3,233 feet. Mecom Oil Co.'s No. 9 Taylor is drilling at 1,180 feet.

Gulf Production Co.'s No. 18 Baldwin is drilling around 1,330 feet. No. 9 Thomas is at 3,353 feet. No. 68 Phoenix is at 2,989 feet, and No. 69 is at 1,090 feet, with a derrick for No. 70. Locations have been made for Nos. 18 Scarborough and 18 Davis Hannah fee. The first is on the north side and the latter on the west side of the dome. Mecom Oil Co.'s No. 10 Taylor is drilling at 1,235 feet.

In the Orange Pool, the Gulf Production Co.'s No. 2 Briggs-Moore is rigging to drill deeper. No. 4 Hager fee is at 3,980 feet. No. 23 Hager fee is at 4,656 feet. No. 6 Winifree fee is around 556 feet. No. 11-A Kishi-Lang is at 3,370 feet. Humble Oil & Refining Co.'s No. 25-A Chesson is at 3,455 feet. Ryeade Petroleum Corp.'s No. 4-B State land, in Cow Bayou, is at 3,710 feet. No. 5 is around 3,360 feet. Texhoma Oil Co.'s No. 6 Chesson is sidetracking at 3,080 feet. No. 15 is drilling at 4,175 feet, and the Rex Petroleum Co.'s No. 4 Carbello is at 3,065 feet, sidetracking. Brownie Babbittee Oil Co.'s No. 2 McLean is drilling around 3,675 feet. No. 5 McLean is at 3,775 feet. Peer Oil Co. is deepening No. 1 Mecom. The Supreme Oil Co. will deepen No. 1 Jackson.

In the Edgerly (La.) Pool, the Rex Oil Co.'s No. 3 Hunter is drilling at 495 feet. W. B. Drysdale's No. 2 Hill is preparing to drill deeper and the Gulf Refining Co. is preparing to do the same in No. 25 Bright-Penn.

In the Lockport district, the Vacuum-Gulf's joint No. 7 Miller is drilling at 4,080 feet, No. 8 is sidetracking at 3,885 feet. Casing was set in No. 10 at 3,100 feet. No. 11 Miller is at 2,075 feet. A location has been made for No. 12. No. 1 Friedberg & Wolf is deepening below 5,220 feet. A derrick is standing for No. 3 Nordages.

The Bennett Production Co. and Humphrey Corp.'s No. 2 Barber, on the north side of the dome at Barber Hill, is sidetracking. Kirby Petroleum Co. is rigging No. 1 Barber there.

Coastal Wildcats

Valley Oil Co.'s No. 1 Austin, Austin County, a formation test, is drilling around 200 feet on a presumably new dome.

In Chambers County, The Texas Company's No. 1 League, 10 miles east of Barber Hill, is around 1,135 feet. Paggi & Co.'s No. 1 Jackson, East Bay Bayou, is at 980 feet.

In Fort Bend County, Neilan, Incorporated's No. 2 Fredericks is shut down at 4,280 feet.

In Grimes County, the Newblock Oil Co.'s No. 1 Fruend, near Carlos, is below 2,525 feet.

In Harris County, Benedum & Trees, of Pittsburgh, Pa., have started drilling No. 1 Kennedy. It is southeast of the Humble Pool. Kelly and others' No. 1 Lipper, at Aldine, is around 233 feet. Gwynn and others' No. 1 Cage, near Huffman, is rigging. Brane Oil Co. has a location north of Spring. Kane Production Co.'s No. 3 Foster is idle at 1,335 feet.

In Hardin County, the Humble Oil & Refining Co.'s No. 1 Weiss is around 2,756 feet.

In Jefferson County, at Fannette Dome, the Gulf Production Co.'s No. 2 V. Bordages is at 3,623 feet in shale. At Big Hill Dome, the Houston Oil Co.'s No. 1 Pipkin-Davis is idle at 2,880 feet. No. 2 Sun-Dyson is at 965 feet.

In Liberty County, the Harrison Oil Co.'s No. 2 Schlender, on the southwest side of the Dayton Pool, is around 3,965 feet. George Leland is rigging No. 2 Grogan Lumber Co. lands. Campbell and others has a derrick up for No. 1 Brown, near Devers.

In Matagorda County, the Ryeade Oil Corp.'s No. 2 Kountz, south of Markham, is at 435 feet. Humble Oil & Refining Co. has a derrick for No. 1 Robbins, at Van Vleck. Gulf Production Co. is rigging No. 1-A Turner. This territory has been explored with the seismograph and torsional balance and indicated dome conditions. Around the Hawkinsville Dome, the Gulf Production Co.'s No. 4 Craig is idle at 3,300 feet, and No. 1 Sanborn is drilling around 2,655 feet. No. 1 Parkinson is rigging. The Shepherd Mott Oil Co.'s No. 2 Hawkins is around 3,145 feet.

The Humble Oil & Refining Co. has a deep test drilling near Dewyville, Newton County, below 4,200 feet. Flanigan Drilling Co. bailed some oil from its test at Lufkin, Angelina County, around 1,700 feet. It will probably make a small pumper.

H. E. Brankann is rigging No. 1 Kyall in Orange County. The Causeway Oil Co.'s No. 1 Dipple is rigging southwest of Brenham, Washington County.

South Louisiana

The Standard Oil Co. of Louisiana is making its third formation test on the lands of the Industrial Lumber Co. around the new presumed dome south of Stark, La., and north of the Vinton Pool. The Gulf Refining Co. is interested jointly in the development of this prospect.

The Sun and Humble companies are rigging joint No. 1, on 35,000 acres in the Johnson Bayou district in the southwestern part of Cameron Parish. It is understood the test will be drilled to 5,000 feet. A number of formation tests were drilled there two years ago by the Johnson Bayou Prospecting Co., with a gasoline rotary rig and all showed more or less gas. They were drilled to 1,000 feet, two of them getting deeper than that. This work was followed by geophysical explorations by several of the major corporations.

In Iberia Parish, the United Oil & Gas Co.'s No. 2 Salt Mine, at Jefferson Island, is drilling around 980 feet, showing gas.

Acreage is still being blocked up around the new prospective dome on the line of Chambers and Liberty Counties, 10 miles south of the South Liberty Pool. No locations have yet been made there. Royalty buyers are also active in that section, some sales having been made on the basis of $80 per acre for the one-eighth royalty retained by the land owner.

KANSAS FIELDS

(Continued from Page 48)

tion 27-23-10; the rig is up for No. 58 Thrall, CSL NW NE, Section 32-23-10. Empire Gas & Fuel Co.'s No. 6, NE cor. SE SE, Section 15-23-11, had sand 1,886-1,912 feet and made 35 bbls. after a shot of 80 quarts. It is also making 10 bbls. of water. York State Oil Co.'s No. 9, SW cor. NE SW, Section 32-22-11, made 150 bbls. after a shot of 160 quarts in sand 1,907-70 feet.

Phillips Petroleum Co. is drilling at 700 feet in No. 8, NW cor. SW, Section 33-22-11. Empire Gas & Fuel Co. and others are drilling at 657 feet in No. 3, SW cor. SE, Section 4-22-12. Fisher & Lauck have a rig on the ground for No. 4 Frankhouser, SE cor. SW NW, Section 4-22-12. Simmons and others have spudded No. 6, NE cor. SE NW, Section 4-22-12; No. 7, SW cor. SE NW, Section 4-22-12, had sand 1,873-99 feet and made 150 bbls. after a shot of 120 quarts; No. 3, SW cor. NE, Section 4-22-12, is spudded. The Texas Company's No. 2, SW cor. NW NE, Section 4-22-12, made 75 bbls. after a shot of 100 quarts in sand 1,810-40 feet. Pure Oil Co. is drilling at 400 feet in No. 4, SE cor. SE, Section 8-23-11. The Texas Company and others have spudded No. 2, NE cor. NW SE, Section 8-23-11. Simmons and others have spudded No. 4, NW cor. SW SW, Section 9-23-11. Mid-Continent Petroleum Corp.'s No. 1 Ellis, SE cor. NW, Section 26-23-11, is a rig on the ground; No. 9, CSL NW SW, Section 15-23-13, is drilling at 1,250 feet. Mission Oil Co.'s No. 7 Schindler, SW cor. NW NW, Section 27-23-13, had sand 1,642-64 feet and made 15 bbls.; No. 8 Schindler, CWL NW, Section 27-23-13, is drilling at 450 feet. Mid-Continent Petroleum Corp. has a machine on the ground for No. 6 Dillinger, SE cor. NW NE, Section 28-23-13; No. 11, SW cor. NE NE, Section 29-23-13, had

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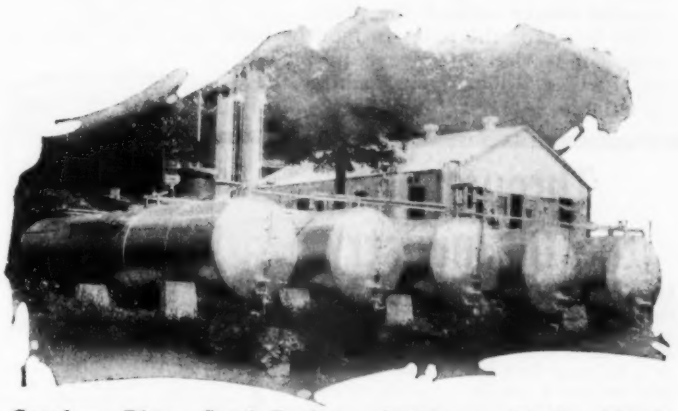

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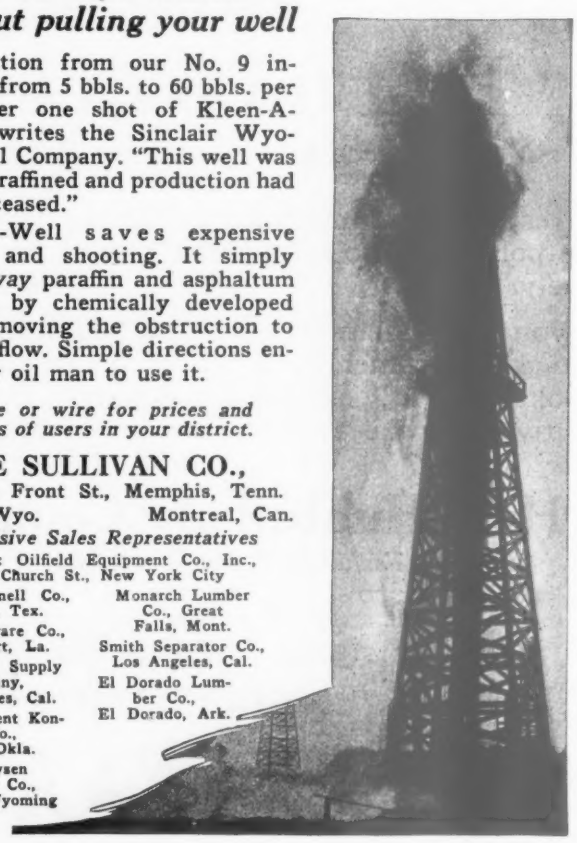

sand 1,703-10 feet and made 10 bbls. after a shot of 100 quarts.

Mid-Kansas Oil & Gas Co.'s No. 8 C N half SW NW, Section 20-25-19, had sand 2,330-95 feet and made 90 bbls. after a shot of 100 quarts. Ritchie & Moore and others' No. 2, NW cor. SW SE, Section 19-24-11, had sand 1,845-57 feet and made 45 bbls. after a shot of 50 quarts. Ward McGinnis and others' No. 5, NW cor. NE SW, Section 30-24-11, had sand 1,796-1,826 feet and has 1,200 feet of oil in the hole; No. 5, SE cor. NE NW, Section 30-24-11, had sand 1,828-50 feet and was shot with 100 quarts and made 90 bbls.; No. 1, SE cor. SW NW, Section 30-24-11, is spudded. Syndicate Oil Co.'s No. 1, SW cor. NW SW, Section 6-24-12, made 20 bbls. after a shot of 60 quarts in sand 1,608-22 feet. Enterprise Oil Co. is drilling at 850 feet in No. 2 Thrall, NW cor. SW SW, Section 7-24-12.

Other Operations

Manhattan Oil Co.'s No. 3 Scott, NE cor. SE SW, Section 24-23-8, is a rig; No. 13, SE cor. SW NE, Section 25-23-8, had sand at 2,520-46 feet and made 125 bbls. after a shot of 40 quarts. Manhattan Oil Co. and Phillips Petroleum Co. have spudded No. 2, SW cor. NW SE, Section 25-23-8; the rig is on the ground for No. 3 Scott, NE cor. NW SE, Section 25-23-8. Phillips Petroleum Co. has spudded No. 5, SE cor. SE, Section 26-23-8. The Texas Company has a rig on the ground for No. 1 Cary, NW cor. NW, Section 36-23-8. Manhattan Oil Co.'s No. 24, SE cor. NE SE, Section 10-23-9, had sand at 2,281-2,348 feet and made 120 bbls. after a shot of 180 quarts. Empire Gas & Fuel Co. has a rig up for No. 35 Teeter, SE cor. SE, Section 16-23-9; the rig is up for No. 9 Atyeo, SE cor. NW NW, Section 6-22-10, and for No. 10 Atyeo, SW cor. SE NW, Section 6-22-10. Theta Oil Co.'s No. 12, SW cor. NW SE, Section 8-22-10, had sand at 2,288-2,365 feet and made 50 bbls. after a shot of 160 quarts. Phillips Petroleum Co. has a rig on the ground for No. 1 Green, NE cor. NE, Section 11-22-10; the rig is on the ground for No. 7 Warrensburg, SE cor. NE SW, Section 12-22-10. Prairie Oil & Gas Co. has spudded No. 5, SW cor. NW NW, Section 12-22-10. White Eagle Oil Co. has a rig up for No. 4 Austin, SW cor. SE NW, Section 12-22-10. Sinclair Oil & Gas Co., is rigging up No. 43 Browning, C SE SW, Section 20-22-10, and No. 44 Browning, C SE SE, Section 19-22-10.

The Texas Company has the rig up for No. 9 Prather, NW cor. SW SW, Section 29-22-10, and No. 10 Prather, CNL SW, Section 29-22-10, is rigging up. Tidal Oil Co.'s No. 18, NE cor. SE NW, Section 29-22-10, had sand at 2,300-42 feet and made 300 bbls. after a shot of 100 quarts; No. 19, C SE NW, Section 29-22-10, had sand at 2,332-62 feet and made 75 bbls. after a shot of 80 quarts. Empire Gas & Fuel Co. is drilling at 560 feet in No. 11 Pratt, SW cor. NE SW, Section 13-23-10. Orlando and others have rigged up No. 1 Davy, NE cor. NW, Section 9-22-11. Simmons and others' No. 4, SW cor. NE NW, Section 19-22-11, is dry at 2,073 feet, and No. 1, NW cor. SW NE, Section 4-22-12, made 300 bbls. after shot of 180 quarts in sand at 1,792-1,832 feet; the rig is on the ground for No. 2 Frankhouser, NE cor. SW NE, Section 4-22-12. Phillips Petroleum Co. has a dry hole at 1,885 feet in No. 1, SW cor. NE SW, Section 5-22-12. Prairie Oil & Gas Co. has completed No. 1, NE cor. SE, Section 5-22-12, for 25 bbls. after a shot of 100 quarts in sand at 1,903-26 feet. Simmons and others have a rig on the ground for No. 1 Holderman, NW cor. NE, Section 9-22-12. Howell & Shaffer's No. 1, SW cor. SE, Section 11-22-12, is dry at 1,977 feet. Pure Oil Co.'s No. 3, SW cor. NE SE, Section 8-23-11, had sand at 1,961-2,001 feet and made 160 bbls. after a shot of 200 quarts.

Rig on the Ground

Skelly Oil Co. has a rig on the ground for No. 1 Wilson, NE cor. SW, Section 29-23-11. Braden Brothers have a rig up for No. 6 Clark, CNL NE, Section 27-22-13. Haverhill Petroleum Co.'s No. 10 Imthurn, CNL NE, Section 9-23-13, is drilling at 1,050 feet. Tidal Oil Co. is drilling at 1,250 feet in No. 9 Shindler, CWL SW SE, Section 16-23-13. Arkansas Fuel Oil Co.'s No. 5 Burns, NW cor. SW, Section 20-23-13, had sand at 1,764-1,776 feet and made 60 bbls. after a shot of 40 quarts. M. J. Sullivan and others have spudded No. 1 Nixon, SW cor. SE, Section 19-24-10. Manhattan Oil Co. has a rig on the ground for No. 2 Carpenter, SE cor. SW NE, Section 19-24-11, and for No. 3 Carpenter, NW cor. SE NE, Section 19-24-11. Manhattan Oil Co. and others' No. 1, NE cor. SW NE, Section 19-24-11, had sand at 1,814-38 feet and made 430 bbls. after a shot of 70 quarts; the rig is up for No. 2 Freeman, SE cor. NW NE, Section 19-24-11, and for No. 3 Freeman, SW cor. NE NE, Section 19-24-11. White Eagle Oil Co. and others have a rig up for No. 6 Carpenter, NE cor. NW SE, Section 19-24-11. Ward McGinnis and others' No. 5, NW cor. NE SW, Section 30-24-11, had sand at 1,796-1,826 feet and made 600 bbls. after a shot of 100 quarts; No. 4, NE cor. NW SW, Section 30-24-11, had sand at 1,805-35 feet and made 475 bbls. after a shot of 100 quarts; the rig is on the ground for No. 5 Wiggins, SE cor. NW SW, Section 30-24-11.

Butler County

Empire Gas & Fuel Co.'s No. 95 Cheney, C NE SE, Section 21-25-5, is drilling at 750 feet; No. 90 Hegberg, CWL NW SE, Section 28-25-5, is drilling at 400 feet; No. 100 Hegberg, C NW NE, Section 28-25-5, is drilling at 450 feet; No. 50 Kirkpatrick, C SW SW, Section 32-25-5, is drilling at 550 feet; No. 72 Stokes, C N half NE, Section 33-25-5, is drilling at 650 feet. Connell & Ramsey have spudded No. 2, C S half SE SW, Section 34-25-5.

White Eagle Oil Co. has rigged up No. 1 Seward, SE cor. SW, Section 12-27-7. Flack and others' No. 4, SE cor. SW SE, Section 22-27-7, had sand 2,737-63 feet and made 80 bbls. after a shot of 30 quarts. Dixie Oil Co. is drilling at 1,000 feet in No. 5, NE cor. SW, Section 27-27-7. Prairie Oil & Gas Co. has spudded No. 1, NE cor. SE NW, Section 33-27-7. Tom Johnson's No. 1, NE cor. SW, Section 3-28-6, had sand 2,670-2,700 feet with 4,500,000 feet of dry gas. Phillips Petroleum Co.'s No. 1, NW cor. SE, Section 3-28-6, had sand 2,670-2,700 feet with 4,000,000 feet of gas and a show of oil and some water.

Vickers Petroleum Co. and others' No. 1, NE cor. SW, Section 29-25-4, had sand at 2,670-71 feet and made 65 bbls. oil and 200 bbls. water on the pump. Empire Gas & Fuel Co. has completed No. 95, C NE SE, Section 21-25-5, for 8 bbls. after a shot of 15 quarts in sand at 600-622 feet; No. 72, C north half NE, Section 33-25-5, had sand at 612-632 feet and made 10 bbls. after a shot of 15 quarts. Sam Sitrin and others are drilling at 900 feet in No. 7 Broagno, NW cor. SW NE, Section 35-26-5. Foraker and others have a rig up for No. 1 McClure, NE cor. SE NE, Section 30-26-6.

Lyon County

S. O. Denton and others' No. 1, NW cor. NW, Section 20-19-12, is dry at 2,030 feet. Leeward Petroleum Co. has spudded No. 1, SW cor. NE, Section 9-19-12. Jones Wilhite and others are shut down at 1,200 feet in No. 1, SW cor. SW, Section 13-17-12. J. H. Reid has abandoned the location for No. 1, NE cor. SE, Section 19-19-13. Theta Oil Co.'s No. 1, SW cor. SE NW, Section 30-21-10, had sand 2,204-23 feet and made 50 bbls. after a shot of 30 quarts. Sheedy and others' No. 7, NW cor. NE SW, Section 31-21-10, had sand 2,206-35 feet and made 110 bbls. the first 24 hours. It was shot with 20 and 20 quarts and is now making 65 bbls. Transcontinental Oil Co. has the rig up for No. 7 Atyco, SW cor. NE NW, Section 31-21-10. Emerald Oil Co.'s No. 1, SW cor. NW SW, Section 19-21-11, is drilling at 480 feet. Swartz and others have a rig up for No. 1 Tiles, SE cor. SW, Section 29-21-12. Phillips Petroleum Co.'s No. 10, NW cor. SE SW, Section 33-21-12, had sand 1,877-1,936

feet and made 95 bbls. after a shot of 180 quarts; No. 11, NE cor. SW SW. Section 33-21-12, had sand 1,895-1,948 feet and made 90 bbls. after a shot of 180 quarts.

Skow Brothers have abandoned the location for No. 1, NE cor. NW, Section 28-17-12. Sheedy and others' No. 1, SE cor. NW, Section 32-20-10, is dry and abandoned at 2,417 feet. Pryor & Lockhard are rigging up No. 1 Barbinger, C NE SW, Section 24-21-10. Theta Oil Co. is drilling at 300 feet in No. 2, SE cor. SW NW, Section 30-21-10. Transcontinental Oil Co.'s No. 5, NW cor. NE SW, Section 30-21-10, had sand at 2,192-2,247 feet and made 80 bbls. after a shot of 80 quarts; No. 9, NE cor.. SW, Section 30-21-10, is spudded. Sheedy and others have spudded No. 10, SW cor. NE SW, Section 31-21-10. Transcontinental Oil Co.'s No. 3, SW Cor. SE NW, Section 31-21-10, had sand at 2,090-2,151 feet and made 75 bbls. after a shot of 80 quarts; the rig is up for No. 5 Atyeo, NE cor. SE NW, Section 31-21-10, and also for No. 7 Atyeo, SW cor. NE NW, Section 31-21-10. Connell and others are drilling at 350 feet in No. 1 Lewis, SW cor. SW, Section 4-20-11. Frank Swift and others are drilling at 750 feet in No. 1, SE cor. NE NE, Section 2-21-12.

Chase County

Manhattan Oil Co. and others' No. 1 Richards, SW cor. SW, Section 1-21-9, is rigged up.

Vickers Petroleum Co. and others have a dry hole at 1,990 feet in No. 1, SW cor. NW, Section 16-20-7. Phillips Petroleum Co. has abandoned the location for No. 2, SW cor. NW NW, Section 15-22-9.

Mitchell County

Marland Oil Co. has a dry hole at 2,670 feet in No. 1, NE cor. SW NE. Section 11-7-10w, and a twin well, No. 1-A Kyle is spudded.

Reno County

Shelton & Sickwell have spudded No. 1 Magnus, SW cor. NE SE, Section 10-23-4w.

Barber County

J. K. D. Shaffer has spudded No. 1 Alexander, NW cor. SE, Section 13-33-13w.

OKLAHOMA FIELDS

(Continued from Page 48)

SW cor. SE, Section 5-28-1w, is rigged up; No. 6-W, SW cor. NE SW, Section 5-28-1w, is spudded; No. 1-W Johnson, SE cor. SW, Section 5-29-1w, is rigging up; No. 7-W Bechtel, NW cor. SE SW, Section 5-28-1w, is rigged up. Dewey-Hoffer's No. 1, SW cor. SE NW, Section 36-28-1w, is drilling at 550 feet.

The Texas Company's No. 2, SW cor. NE, Section 28-25-1w, had sand 4,280-82 feet, and started flowing 100 bbls. an hour. It is now making 1,800 bbls. daily.

Dewey-Hoffer company is drilling at 1,050 feet in No. 1, SW cor. SE NW, Section 36-28-1w. Arkansas Fuel Oil Co. has a rig on the ground for No. 2 Moore, NW cor. SW SW, Section 3-27-1w. Harold Petroleum Co.'s No. 3, NE cor. SE SW, Section 4-28-1w, had sand at 3,439-46 feet and made 125 bbls. naturally.

Love County

Schermerhorn-Ardmore's No. 1 Posthook, NE cor. NW NW, Section 2-6s-1, is a rig. Schermerhorn and others have built a rotary rig for No. 1 Dillard, SE cor. NE NW, Section 25-6-2.

Sequoyah County

Sequoyah Oil Co. has a rig up for No. 1 Miller, C SW SE, Section 32-11-25.

Grant County

Mississippi Valley Oil Co. has spudded No. 1, SE cor. SE, Section 18-29-3w.

Carter County

Wirt Franklin and the Prairie Oil & Gas Co.'s No. 5, NW cor. NW, Section 3-2s-3w, is drilling at 500 feet; the rig is built for No. 6 Pruitt, NE cor. NW NW, Section 3-2s-3w, and for No. 7 Pruitt, NW cor. NE NW, Section 3-2s-3w. Magnolia Petroleum Co. has built the rig for No. 1 Adams, NW cor. NE SE, Section 3-2s-3w. Twin State Oil Co.'s No. 1, SE cor. SW SW, Section 15-2s-3w, had broken sands 3,190-3,312 feet and pumped 35 bbls. initially and is now making 20 bbls. Humble Oil Co.'s No. 8, SE cor. NW NW, Section 22-2s-3w, had broken sand 2,487-2,965 feet and made 250 bbls. on the pump. It is now making 190 bbls. The rig is built for Magnolia Petroleum Co.'s No. 1 Morris, NW cor. NW, Section 22-2s-3w; No. 1, SE cor. NW NE, Section 23-2s-3w, is drilling at 1,600 feet. Humble Oil Co.'s No. 4, SE cor. NE, Section 33-1s-3w, had broken sand 3,152-77 feet and swabbed 35 bbls. Magnolia Petroleum Co. has a rig on the ground for No. 4 Burmpass, NE cor. SE, Section 33-1s-3w. Humble Oil Co. is drilling at 1,050 feet in No. 2, SW cor. SW, Section 34-1s-3w; No. 3, NW cor. SW SW, Section 34-1s-3w, is cementing the surface casing at 100 feet. Magnolia Petroleum Co. is drilling at 1,500 feet in No. 4, SW cor. NE SW, Section 34-1s-3w; and No. 6, NW cor. SE SW, Section 34-1s-3w, is rigging up; No. 7 McClish, SW cor. SE SW, Section 34-1s-3w, is a new rig; No. 3, SW cor. SE, Section 34-1s-3w, is drilling at 1,400 feet. Simpson-Fell Oil Co.'s No. 2, SW cor. NW, Section 34-1s-3w, had sand 3,036-85 feet, and is holding up at 425 feet daily. Westheimer & Daube's No. 2, SE cor. SW SW, Section 34-1s-3w, is drilling at 400 feet; Coline Oil Co.'s No. 4, SE cor. NE, Section 7-2s-2w, had gas sand 1,673-79 feet, and is estimated at 4,000,000 feet. Iowa Oil Co. is drilling past a bit at 800 feet in No. 2, SE cor. NE SE, Section 7-2s-2w. Roxana Petroleum Corp. is drilling at 2,963 feet in No. 2, NW cor. SE SE, Section 7-2s-2w. The Carter Oil Co.'s No. 2, SW cor. SW, Section 8-2s-2w, is drilling at 1,400 feet. Coline Oil Co. is drilling at 350 feet in No. 8, SW cor. NW, Section 8-2s2w. Skelly Oil Co. has a rotary rig in for No. 3 Hardy, SW cor. NW SW, Section 8-2s-2w; and No. 4 Hardy, C N half NW SW, Section 8-2s-2w. Magnolia Petroleum Co.'s No. 2, NW cor. SW, Section 15-2s-2w, made 9 bbls. an hour from sand 1,045-64 feet, and flowed 60 bbls. daily when tubed. Amerada Petroleum Corp. is drilling at 450 feet in No. 24 Baptiste, SE cor. SW NW, Section 20-5s-1; No. 25, SE cor. SW SE, Section 20-5s-1, is rigging up; No. 15, NE cor. SE NW, Section 28-5s-1.

Skelly Oil Co.'s No. 1, SW cor. NW, Section 17-2s-2w, is drilling at 650 feet. Humble Oil Co. has rigged up a rotary for No. 1 Pierce, NW cor. SW, Section 17-2s-2w. Wirt Franklin's No. 1-A, SE cor. NE, Section 18-2s-2w, had broken sand at 1,990-2,060 feet and is estimated at 5,000,000 feet of gas. Humble Oil Co.'s No. 3, NE cor. SW, Section 8-3s-2w, had sand at 2,843-58 feet and made 35 bbls. on the pump.

Pontotoc County

Hughes and others have rigged up No. 1. NE cor. SW NE, Section 28-4-7.

Seminole County

Searight and the Carter Oil Co. have a rig on the ground for No. 1 Grayson, NW cor. NE SE, Section 33-10-6. The Carter Oil Co. and others are drilling at 2,430 feet in No. 1, SE cor. SE, Section 35-10-6. Prairie Oil & Gas Co.'s No. 1, SW cor. NE SW, Section 28-11-8, is dry and abandoned at 3,480 feet. Sinclair Oil & Gas Co. is rigging up No. 9 Pierce, SW cor. SE SE, Section 33-11-8. McMann and the Magnolia Petroleum Co.'s No. 6, NE cor. SE SW, Section 34-11-8, had sand 3,353-82 feet and made 25 bbls. after a shot of 20 quarts. Devonian Oil Co. is rigging up No. 2 Deer, SW cor. NE, Section 8-10-8.

Amerada Petroleum Corp.'s No. 1, SE cor. SW NE, Section 23-9-6, is drilling at 1,250 feet; No. 1, NW cor. NE SE, Section 24-9-6, had sand 4,019-60 feet, with 58 bbls. of oil and sand 4,060-63 feet with a hole full of water. It is shut down. Barnsdall Oil Co.'s No. 1, SE cor. NW, Section 24-9-6, had sand 3,825-40 feet and is flowing 2,135 bbls.; No. 2, NE cor. SE NW, Section 24-9-6, had sand 3,930-60 feet and flows every half hour. It is estimated at 600 bbls. Indian Territory Illuminating Oil Co.'s No. 1, SW cor. NE, Section 24-9-6, had sand 3,935-54 feet, and was making 120 bbls. when the rig burned down. Independent Oil & Gas Co. and Holm & Jarvis' No. 2, NE cor. SE, Section 7-9-8, had sand

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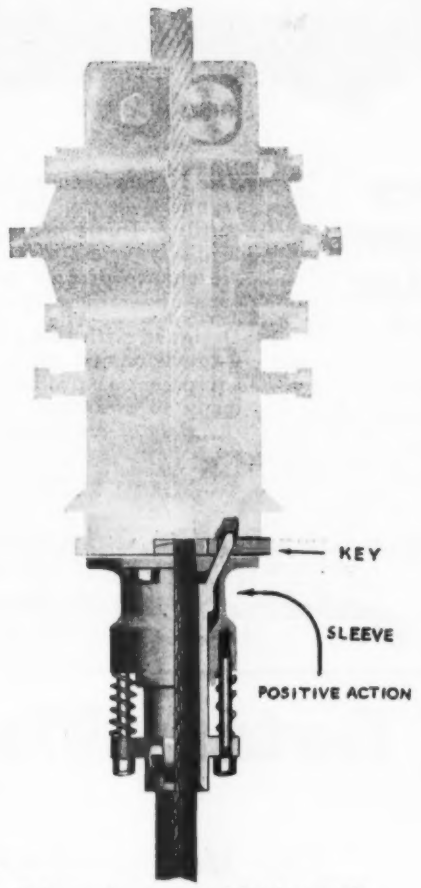

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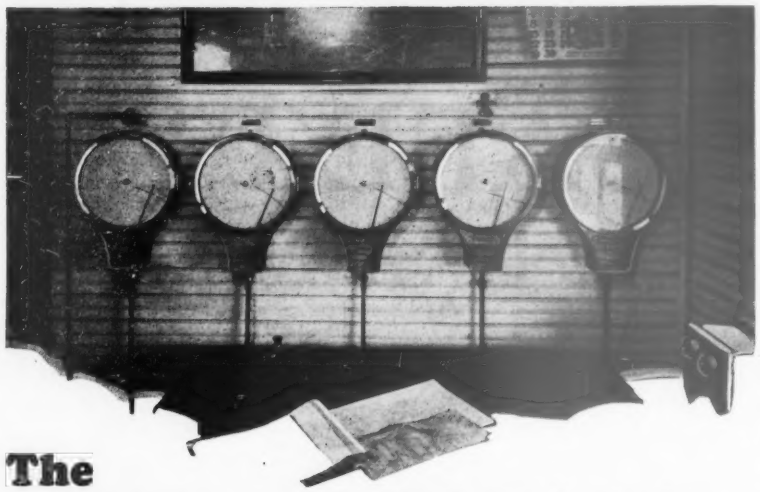

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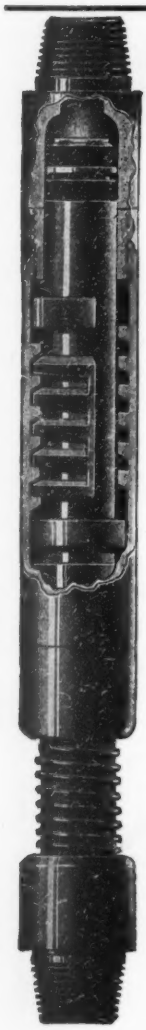

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3,271-3,312 feet and made 100 bbls. after a shot of 5 quarts. Carter Oil Co. has spudded No. 1, SW cor. SW NW, Section 10-8-7. Mid-Continent Petroleum Corp.'s No. 1, NW cor. NE, Section 23-8-7, had sand 3,197,3,208 feet and made 125 bbls. It is being drilled deeper in shale.

Dixie Oil Co. has spudded No. 6, SE cor. NW NE, Section 6-7-8. Magnolia Petroleum Co.'s No. 5, NE cor. NE, Section 6-7-8, is drilling at 250 feet.

Hughes County

Burke-Greis Oil Co.'s No. 3, NE cor. SW SW, Section 15-10-9, had sand 3,258-3,319 feet and is shut in with gas estimated at 160,000,000 feet. McCulloch Oil Co.'s No. 1, NE cor. NW SE, Section 17-10-9, is drilling at 500 feet. Minnehoma Oil Co.'s No. 1, NE cor. SE, Section 17-10-9, had sand 3,010-40 feet dry, and 3,045-60 feet with 5,000,000 feet of gas. Wrightsman Petroleum Co.'s No. 1, NW cor. SE SE, Section 26-10-10, had sand 2,959-83 feet with 10,000,000 feet of gas.

Boggs & Sykes are drilling an old well deeper in No. 6, SW cor. SE NE, Section 31-8-8. W. R. Ramsey's No. 5, SW cor. SE SE, Section 31-8-8, had sand 4,008-25 feet and made 95 bbls. It is drilling deeper. Magnolia Petroleum Co. is rigging up No. 4, NW cor. SW SW, Section 33-8-8.

In the Yeager district, Robinson & Letcher have a rig up for No. 1 Carter, SE cor. NW, Section 17-8-10. Dixie Oil Co. is drilling at 3,400 feet in No. 1 Diamond "C", SE cor. NE SE, Section 18-8-10.

Lincoln County

Magnolia Petroleum Co. is rigging up No. 2 Kilgore, SW cor. NE SW, Section 8-15-6. Mid-Continent Petroleum Corp.'s No. 5, SW cor. NW, Section 8-15-6, had top of sand 3,817 feet and is drilling at 3,846 feet and flowing 1,600 bbls. daily; No. 6, SE cor. SW NW, Section 8-15-6, had sand 4,079-84 feet and made 450 bbls. Phillips Petroleum Co.'s No. 2, NE cor. NW SW, Section 8-15-6, had sand 4,080-83 feet and made 1,200 bbls.; No. 3, NW cor. NW SW, Section 8-15-6, is drilling at 1,040 feet; No. 4, SE cor. NW SW, Section 8-15-6, is drilling at 400 feet. Magnolia Petroleum Co.'s No. 3, NE cor. SW SW, Section 3-14-5, had sand 3,446-76 feet and is good for 20 bbls. after a shot of 60 quarts. The Prairie Oil & Gas Co. has completed a gas well in No. 21, CEL NE NW, Section 3-14-5. Sand was 2,617-32 feet and the well is shut in with 3,500,000 feet of gas. Phillips Petroleum Co.'s No. 6, SW cor. NE, Section 10-14-5, had sand 3,412-25 feet and is estimated at 100 bbls. Southwestern Petroleum Co.'s No. 1, SE cor. NE, Section 21-14-5, had sand 3,946-73 feet and swabbed 60 bbls. H. F. Wilcox Oil & Gas Co.'s No. 3, NE cor. NW NW, Section 22-14-6, had sand 3,010-41 feet and made 15 bbls. naturally. It was shot with 30 quarts and made 20 bbls.

Magnolia Petroleum Co.'s No. 8, NW cor. SE SE, Section 34-15-5, had sand 3,468-98 feet and made 20 bbls. naturally. It was shot with 90 quarts and made 115 bbls.; No. 2, SW cor. NE SW, Section 8-15-6, is drilling at 600 feet; No. 3, NE cor. SW SW, Section 3-14-5, had sand 3,446-76 feet and made 50 bbls. after being shot with 60 and 160 quarts; No. 3, SW cor. NW SE, Section 10-14-5, is drilling at 500 feet; No. 2, NW cor. NE SE, Section 10-14-5, had sand 3,405-21 feet, and is estimated at 100 bbls.; No. 1, SE cor. NW, Section 10-14-5, is rigging up. Phillips Petroleum Co.'s No. 6, SW cor. NE, Section 10-14-5, had sand 3,412-25 feet and made 92 bbls. naturally. It was shot with 30 quarts and made 110 bbls. Magnolia Petroleum Co.'s No. 3, SW cor. NW SW, Section 11-14-5, is drilling at 2,125 feet. Southwestern Petroleum Co. has the rig up for No. 4 Smith, NW cor. SW NE, Section 11-14-5. The Texas Company's No. 1, NW cor. NE NE, Section 11-14-5, had sand 3,406-38 feet and swabbed 65 bbls.

Osage County

Waite & Foltinson's No. 15, C SE NE, Section 13-21-12, had the Bartlesville sand 1,167-79 feet and made 60 bbls. after a shot of 60 quarts. No. 16 Harris, NE cor. SE NE, Section 13-21-12, is rigged up. H. S. Cooper has a dry hole at 1,440 feet in No. 8 Walker, C SW SW, Section 24-21-12. Devonian Oil Co.'s No. 14, NE cor. SW SW, Section 9-21-13, had sand 1,158-92 feet and made 12 bbls. after a shot of 20 quarts. J. Reed's No. 13, NE cor. SW SE, Section 19-21-13, had sand 1,120-40 feet and made 2 bbls. after a shot of 80 quarts. Echo Oil Co.'s No. 5, NE cor. NW SW, Section 7-20-13, had sand 1,254-95 feet and made 10 bbls. after a shot of 120 quarts.

Phillips Petroleum Co. is drilling at 2,100 feet in No. 1, SW cor. NE, Section 2-27-5; No. 2, SW cor. SE SW, Section 2-27-5, is drilling at 1,560 feet; No. 3, SW cor. SE NE, Section 2-27-5, is drilling at 1,200 feet; the rig is up for No. 6, NE cor. SW NE, Section 12-27-5; the rig is on the ground for No. 7, NW cor. SE NE, Section 12-27-5; the rig is built for No. 15, CNL NW NE NE, Section 12-27-5; No. 4, SE cor. SW, Section 7-27-6, had sand 2,950-84 feet and made 100 bbls. after a shot of 100 quarts; No. 14, NE cor. NW SW, Section 7-27-6, is spudded. Kewanee Oil Co. has a rig up for No. 1, SW cor. NE NW, Section 34-27-6. Lewis Oil Co. is drilling at 600 feet in No. 5, SW cor. NW SE, Section 21-26-6.

Keener Oil Co.'s No. 14, SE cor. SW, NE, Section 15-29-10, is drilling at 850 feet; No. 13, NW cor. SE NE, Section 15-29-10, is drilling at 725 feet. The Carter Oil Co. and others' No. 1, SW cor. NW NE, Section 10-25-8, is drilling at 450 feet. Osage Oil Co.'s No. 1, C SE, Section 6-24-8, had sand at 2,832-34 feet and made 1,250 bbls. naturally. Marland Oil Co. and others have a machine in for No. 5, NE cor. SE NE, Section 16-24-8. Prairie Oil & Gas Co. and others have spudded No. 3, CEL NE SW, Section 32-24-9. Wynona Oil Co.'s No. 3, SE cor. SW SW, Section 27-24-10, is drilling at 950 feet. Roxana Petroleum Corp. and others are drilling at 1,200 feet in No. 4, CWL SE, Section 1-24-11. Prairie Oil & Gas Co. and others have a rig in for No. 3, SE cor. NW SE, Section 5-23-9. Skelly Oil Co. and others are drilling at 835 feet in No. 8, SW cor. NW NE, Section 2-21-8. Devonian Oil Co. has a rig in for No. 2, NE cor. SE SE, Section 15-21-10. Wynona Oil Co.'s No. 1, SW cor. SE NE, Section 20-21-11, is drilling at 1,875 feet. Kewanee Oil Co.'s No. 8, SE SW, Section 19-21-12, is drilling at 1,940 feet. Elliott & Smith have a rig in for No. 25, NW cor. NE NW, Section 30-21-12. Pioneer Petroleum Co. had rigged up No. 8, center south half NW, Section 5-20-11. Sand Springs Home has spudded No. 3, NW cor. SW SW, Section 11-20-11.

Muskogee County

Wirick & King have spudded No. 1-A, SE cor. NE, Section 18-15-15. E. A. Hutchinson has spudded No. 1-A, SE cor. NW NE, Section 31-15-15. J. M. Foltze's No. 3, C SW SE, Section 28-15-17, is dry and abandoned at 1,989 feet. R. H. Pierce's No. 1, CNL SW SW, Section 17-14-17, had sand 1,350-1,433 feet and made 10 bbls. after a shot of 40 quarts. Jolly Ogg Co. has a rig up for No. 1 Cherry, CWL NE NW, Section 2-14-8. C. W. Bradley is shut down at 794 feet in No. 3, SW cor. NW SW, Section 5-14-9. Reed & Gray are drilling at 740 feet in No. 1 Grayson, NE cor. SE SW, Section 12-14-16. O. J. Stout and others are drilling at 150 feet in No. 2, SE cor. NE NE, Section 28-13-15. W. D. Sneddon is drilling at 250 feet in No. 1, SW cor. SE SE, Section 27-13-19.

Payne County

Olean Petroleum Co.'s No. 2, SE cor. NE NE, Section 23-19-4, had sand 3,636-43 feet and made 50 bbls. on the pump. Magnolia Petroleum Co.'s No. 2, NW cor. SW NW, Section 24-19-4, pumped 10 bbls. from sand 3,810-11 feet and had a total depth of 3,850 feet. Olean Petroleum Co.'s No. 4, SE cor. NW NW, Section 24-19-4, made 620 bbls. naturally from sand 3,741-44 feet. Deep Rock Oil Co.'s No. 3, SW cor. NW SW, Section 23-18-3, had sand 4,290-93 feet and made 136 bbls. Empire Gas & Fuel Co.'s No. 2, SW cor. NW NW, Section 26-18-3, had sand 4,321-27 feet and made 400 bbls. naturally. Deep Rock Oil Co.'s

No. 2, NE cor. NE NE, Section 27-18-3, made 20 bbls. oil and 30 bbls. water from sand 4,312-53 feet. New England Oil Co.'s No. 2, NW cor. NE NW, Section 26-18-4, made 185 bbls. naturally from sand 1,961-71 feet. Magnolia Petroleum Co.'s No. 1, NE cor. SW SW, Section 8-19-5, is spudded. Sinclair Oil & Gas Co. will drill an old well deeper in No. 12 Hemmie, NE cor. NW, Section 3-19-5. Old total depth was 3,567 feet. Willis Oil & Gas Co.'s No. 1 Driggs, SW cor. NE, Section 30-18-5, will be drilled deeper. Old total depth was 3,543 feet. Mulberry Oil Co.'s No. 4, NW cor. NE NW, Section 5-17-4, is drilling at 2,200 feet. Roxana Petroleum Corp.'s No. 1, SW cor. NE NW, Section 21-17-4, is drilling at 910 feet.

Pawnee County

Watchorn Oil & Gas Co.'s No. 13, C SW SW, Section 33-23-3, had sand 4,076-90 feet and made 230 bbls. after a shot of 30 quarts. Devonian Oil Co. has built the rig for No. 2 Dobson, SW cor. SE NW, Section 35-22-6. Homa Wood Oil Co.'s No. 1, SE cor. SW, Section 25-21-6, is dry and abandoned at 3,071 feet. Magnolia Petroleum Co.'s No. 1 Williams, SW cor. SE, Section 28-20-5, is a rig; and No. 2, NE cor. SE SE, Section 32-20-5, is spudded. Shaffer Oil & Refining Co. has built the rig for No. 2 Platt, SW cor. NW SE, Section 15-20-6. Southwestern Oil Fields Co. has spudded No. 1 Gibbons, NW cor SE, Section 31-21-9.

Noble County

Ossenbach and the McMann Oil Co. have a dry hole at 4,500 feet in No. 1, SW cor. NE, Section 14-24-2.

Tulsa County

Sunray Oil Co. and Munn Brothers' No. 5, SW cor. SE NW, Section 6-18-12, had sand 2,139-40 feet and made 90 bbls. oil and 100 bbls. water; No. 6 Sargo, SE cor. NW, Section 6-18-12, is drilling at 900 feet. Sunray Oil Co.'s No. 5, CSL NE NW, Section 6-18-12, had the Wilcox sand 2,005-35 feet and made 110 bbls. after a shot of 40 quarts. Burke-Greis Oil Co.'s No. 1, NE cor. SE NE, Section 5-17-11, is dry at 2,540 feet. M. P. Evans has a dry hole at 2,947 feet in No. 1, SE cor. NW, Section 7-17-11. Deen & Wickers and others' No. 5, CEL NE SE SE, Section 10-17-11, had sand 1,615-54 feet and made 10 bbls. after a shot of 110 quarts. Henry & Avers have spudded No. 1 NE cor. SE, Section 29-17-11. Ike Simons' No. 2, CNL NW SE, Section 28-17-11, has 1,000 feet of oil in the hole from sand topped at 1,620 feet. The Transcontinental Oil Co. has spudded No. 4 Barnett, NE cor. SW NE, Section 28-17-11. Peterson and others have spudded No. 1 Chisholm, NW cor. SE NW, Section 24-18-13. F. A. Best is drilling at 600 feet in No. 1 Colbert, SW cor. NE NW, Section 33-18-14.

Suppes and others' No. 4, CEL NW SW, Section 34-19-12, is dry at 2,345 feet. Sunray Oil Co. is fishing for a bailer at 1,390 feet in No. 2 Kiefer, SE cor. SW SW, Section 31-19-12.

Jefferson County

The Ascott Oil Co. is drilling at 1,250 feet in No. 1 Wright, C north half SE SW, Section 34-5s-6w. Oasis Oil Co. has abandoned the location for No. 1, C SE SW, Section 34-5s-6w. Couch & Jones have abandoned the location for No. 1, SE cor. SW, Section 29-6s-5w. New England Oil & Pipe Line Co. has spudded No. 1 Hampton, SE cor. SW, Section 1-7s-4w.

Stephens County

E. S. Cary Drilling Co.'s No. 1-A, SE cor. NW SE, Section 24-1-9w, had sand at 2,263-77 feet and is estimated at 25,000,000 feet. Malineree and others have rigged up a rotary for No. 2 Brittain, C NW SW, Section 20-1s-8w; No. 8, SE cor. NW SW, Section 20-1s-8w, had sand at 2,020-36 feet and flowed 590 bbls. daily for the past few days. Independent Trust has a dry hole at 1,900 feet in No. 1-A, NW cor. NE, Section 26-1s-8w. Big 12 Oil Co.'s No. 5, SE cor. SW, Section 27-1s-8w, had broken sand at 1,405-60 feet with 5,000,000 feet of gas. Winkler & McQueen's No. 4, SE cor. NW, Section 28-1s-8w, is dry at 2,305 feet. Kedney and others have rigged up No. 2-A Nelson, SW cor. SE NE, Section 28-1s-8w, Empire Gas & Fuel Co.'s No. 33, NE cor. SW SW, Section 33-1s-8w, had sand at 1,659-69 feet and is making 35 bbls. on the pump. Magnolia Petroleum Co.'s No. 7, SW cor. SE SE, Section 25-1s-9w, had sand at 1,940-58 feet and pumped 50 bbls.

Garvin County

Texas Pacific Coal & Oil Co.'s No. 1, NW cor. NE, Section 21-1-3w, is dry at 2,175 feet; a rotary rig is being built for No. 5 Driden, NW cor. SE SE, Section 8-1-3w. Magnolia Petroleum Co. has completed a gas well in No. 8-A, SW cor. NW SE, Section 16-1-3w. Sand was 1,877-85 feet and the well is shut in with 2,000,000 feet.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended June 12, totaled 1,716,000 bbls., a daily average of 245,142 bbls., compared with 1,783,000 bbls., a daily average of 254,714 bbls. for the week ended June 5, and a daily average of 230,071 bbls. for the four weeks ended June 12.

	Week Ended June 12
At Atlantic Coast Ports—	
Baltimore	132,000
Boston	140,000
New York	786,000
Others	171,000
Total	1,229,000
Daily average	175,571
At Gulf Coast Ports—	
Galveston district	95,000
New Orleans and Baton Rouge	320,000
Tampa	72,000
Total	487,000
Daily average	69,571
At all United States Ports—	
Total	1,716,000
Daily average	245,142
Daily average 4 weeks ended	230,071

Receipts of crude and refined oils at Atlantic and Gulf Coast ports for the week ended June 12 totaled 343,000 bbls., a daily average of 49,000 bbls., against 751,000 bbls., a daily average of 107,286 bbls. for the week ended June 5, and a daily average of 70,036 bbls. for the four weeks ended June 12.

	Week Ended June 12
At Atlantic Coast Ports—	
Baltimore	42,000
Boston	75,000
New York	74,000
Philadelphia	72,000
Others	80,000
Total	343,000
Daily average	49,000
Total Atlantic and Gulf Coast ports	343,000
Daily average	49,000
Daily average 4 weeks ended	70,036
Distribution of total California oil receipts is as follows:	
Crude	271,000
Gas oil	72,000
Total	343,000

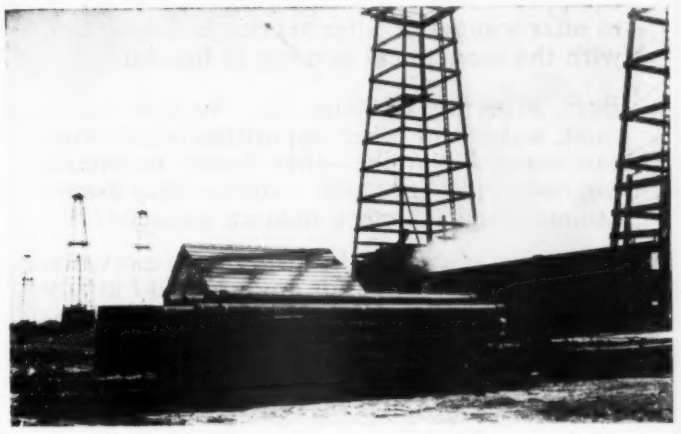
GEOLOGICAL SURVEY OF BRADFORD FIELD

BRADFORD, Pa., June 19.—Work of vital importance to the oil producers in the Bradford district is being started in McKean County by Charles R. Fettke, Ph.D., and his assistant, W. A. Copeland, the former being professor of geology and mineralology in the Carnegie Institute of Technology at Pittsburgh, and the latter instructor of geology in the same school. The Pennsylvania Topographic and Geological Survey is responsible for the presence of the two men in the Bradford oil field.

During the coming summer months, Professor Fettke and Mr. Copeland will make an exhaustive study of geological conditions in this section, hoping with the active aid of the Northwestern Pennsylvania Oil Producers Association, of which Edward A. Booth is president, to cover a great portion of the Bradford Field before fall. Detailed study of oil formations and possibilities will be carried out. Flooding and its effects will be analyzed and certain of the various problems confronting the Bradford oil producers will be examined with an aim toward solution.

When the work is completed, a comprehensive plan of geological conditions will be available as an aid toward realization of the full value of local oil deposits.

Republic 8" Casing in Oklahoma



REPUBLIC

The photograph shows a string of 8" Republic casing at School Land, 64, Well 64, in the Mid-Continent Field at Garber, Oklahoma.

Republic tubing, casing, line, drive and rotary drill pipe continues to play an important part in successful oil production.

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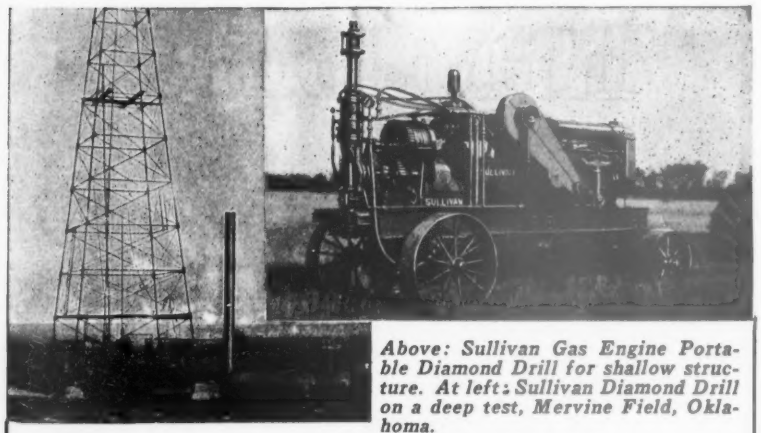

Above: Sullivan Gas Engine Portable Diamond Drill for shallow structure. At left: Sullivan Diamond Drill on a deep test, Mervine Field, Oklahoma.

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During the past six years, one job after another has shown the diamond core drill to be the most accurate, most economical tool for locating oil. Cores brought up by these drills, enable the geologist to say definitely whether oil is present and at what depth it may be expected.

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Diamond Drilling for Oil, Bulletin 1580-O.

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BIG SHOTS IN PANHANDLE MAY ACCOUNT FOR WATER INTRUSION

By J. L. Dwyer

AMARILLO, Tex., June 19.—"And why are you washing that elephant?" inquired the observer of the gentleman who had been trifling with Mr. Volstead's big idea. "Because," said the other, "Hic, I want to do big things in a big way."

The incident related above did not occur in the Texas Panhandle, but it symbolizes to some extent the Cyclopian scheme of things in that busy area. Presenting as it does a substantial claim for the spotlight of the petroleum industry, the Texas Panhandle is totally different from any other field. Its vast area never fails to make an impression upon all who gaze at its broad expanse; and quite in keeping with the scope of the field, big things are done in a big way.

To the Mid-Continent operator, who regards the Bartlesville sand shots of 240 quarts as very large; a trip around the soup wagons as the shooters prepare to set one off would be a liberal education, for several of the Panhandle wells have been shot with 600 and 700 quarts; and the Jake Phillips well was touched slightly with a modest sum of 870 quarts of nitroglycerin.

The practice of shooting wells with such heavy shots cannot be said to have produced altogether good results in the Panhandle. The custom was inaugurated by the owners of the Lennix-Patterson well, which offsets the Dixon Creek Oil Co.'s No. 1, in Hutchinson County. The Lennix-Patterson well was shot with 565 quarts, and temporarily responded with a healthy increase. It flowed 2,300 bbls. the first 24 hours after the shot, but later began making water. The water has never been plugged off, although many efforts have been made. The Dixon Creek Oil Co.'s No. 1 was never shot, and was not affected in any way by the huge shot in the adjoining well. Its production continues steadily along, and it never showed water.

The most effective way to make a comparison with the effect of 870 quarts of nitroglycerin is to ponder upon the activity of that gentleman who can hardly be accorded a prominent place in society—the safe blower. When the safe blower desires to separate the cover of the vault from its nocturnal position, he carefully drills a few holes and pours about a half pint of the deadly "soup" into place, and bang! the door is no more. Half a pint performs the work, then consider the propulsive effect of 870 quarts.

One who has visited the great State of Texas has surely heard some of the natives make the remark that if folded backwards upon the map, Texas would almost reach into Canada. So be it. If 870 quarts of nitro were exploded on the surface it would undoubtedly blow the State of Texas clear into the Arctic Circle.

The accompanying picture shows one of the shooters of the Panhandle, Tex Thornton, who has handled many of the large shots in that territory. The shell which he is supporting is 5¾ inches in diameter and is designed for use within 6⅝-inch casing. The shell holds 30 quarts and by use of the multiplication table it will be seen that 29 of these shells were necessary to hold the 870 quarts which were put into the Phillips well. A solid column of nitroglycerin 261 feet high and 5¾ inches in diameter did the work.

The disruptive and propulsive effect of this great amount of explosive upon the body of sand is interesting to consider, and if only accurate information of its work could be found a marvelous contribution to science would have been made. Varying theories have been formed about the size of the hole made by the shot, and also about the burning effect which the great amount of nitro would have upon the sand. Some who have considered the matter are inclined to believe that the sand would be burned by such a large shot; but a study of the dolomite which produces in the Panhandle does not give this theory any strength. The dolomite is a hard gray stratum, and the breaks which are sometimes called sand are a grayish brown. To see this formation is to doubt if there are sufficient explosives in the land to do more than scorch it. It might well be used in the oil fields of the infernal regions where it could be utilized as fire bricks for the forges.

Tex Thornton, nitroglycerin shooter, with a 30-quart shell. Twenty-nine of such shells were lowered in one Panhandle well that was shot with 870 quarts of the explosive.

GROSS CRUDE STOCKS CONTINUE DOWNWARD

Pipeline and tank farm gross domestic crude oil stocks east of the Rocky Mountains decreased 4,330,000 bbls. in the month of May, according to returns compiled by the American Petroleum Institute from reports made to it by representative companies. The net change shown by the reporting companies accounts for the increases and decreases in general crude oil stocks, including crude oil in transit but not producers' stocks.

At refineries east of California for May: The following is the institute's summary for the month of May of the increases and decreases in stocks at refineries covering approximately 75 per cent of the operating capacity east of California:

	Barrels of 42 Gallons Increase	Decrease
Domestic crude oil	1,929,000	.....
Foreign crude oil	.....	785,000
Gasoline	.....	2,691,000
Kerosene	521,000	.....
Gas and fuel oil	1,030,000	.....
Lubricating	88,000	.....
Miscellaneous	227,000	.....
Total	3,795,000	3,476,000
Deduct	3,476,000	.....
Net increase	319,000	.....

UNIVERSITY ROYALTIES

AUSTIN, Tex., June 19.—Oil royalties for the University of Texas on May production in the Reagan County fields was $263,504, or $6,050 short of the record month. The Big Lake Co. paid $175,471 and the Texon Co. $88,033, bringing the total university oil royalties to $3,595,945.

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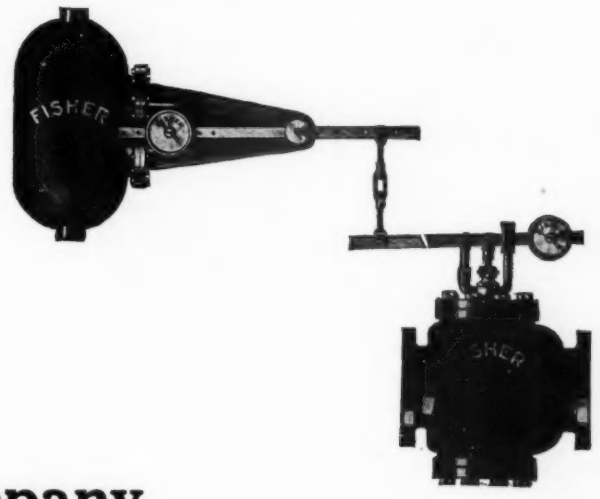
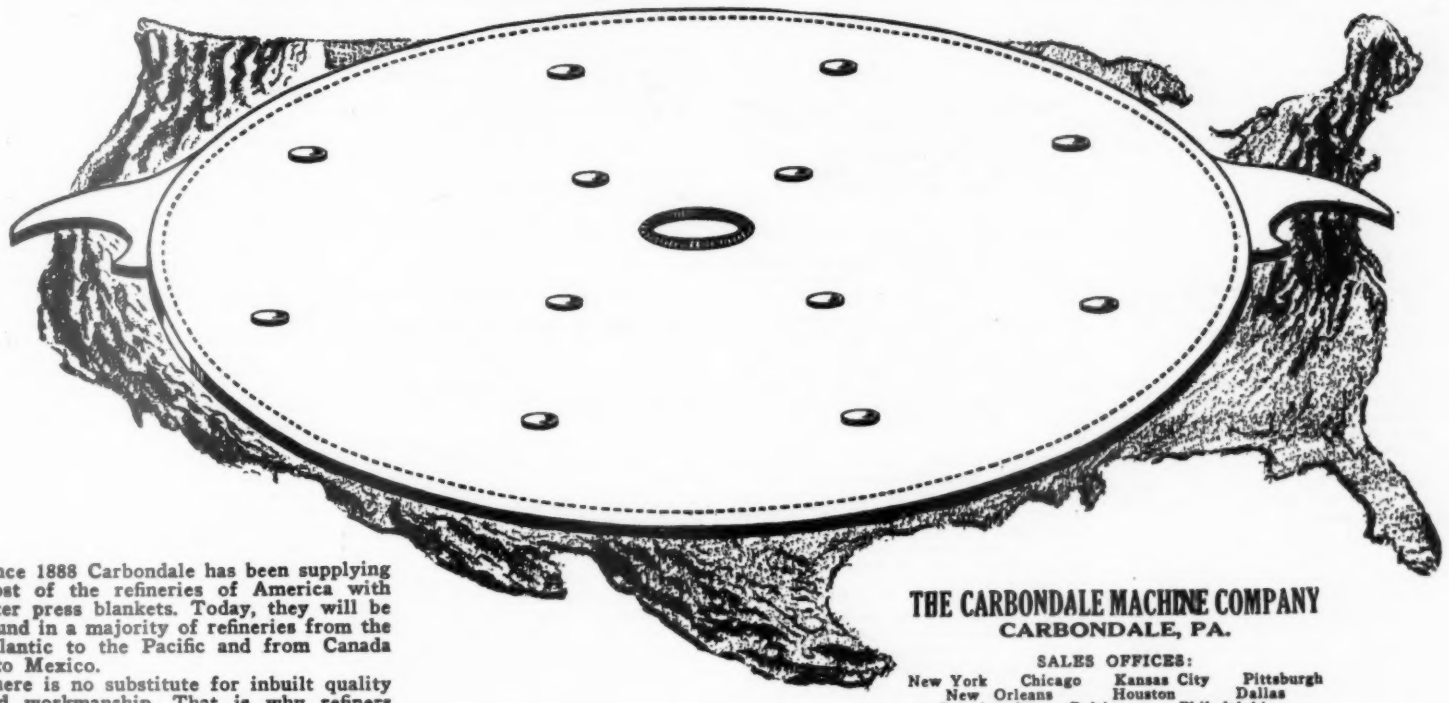


The Fisher Governor Company
Marshalltown, Iowa

From Coast to Coast



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LEASES—PRODUCTION

BLOCK 5,000 acres oil leases south of Wheeler, Collinsworth County, Texas; $5 per acre. 920 acres 5 miles north Panhandle, Texas, $15 per acre. A. B. Hugo, Enid, Okla.

SOUTHEASTERN NEW MEXICO
10,000 acres state leases in ten townships of southern Lea County. Also drilling blocks in Chaves and Eddy Counties. Address W. A. Nicholas, Roswell, N. Mex.

AMARILLO PANHANDLE OIL FIELD
Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

COLORADO OIL
We have a good block of acreage 2½ miles from the railroad with old oil well on block drilled before railroad or market was available. A Star rig will handle it. Good proposition to party that has cash to help finance deal. Quick action. Write or wire for further information. 138 E. Fifth Ave., Garnett, Kans.

HAVE 40 ACRES near Raisin City, Calif., oil wells being dug. Need money. will sell to best bidder. Box B-352, The Oil and Gas Journal, Tulsa, Okla.

WILDCAT acreage. Leases, producing and nonproducing. Royalties in any part of the field. 11,000-acre sheep ranch with 5,000 head of sheep. About 1 mile from depot. Wire or write W. J. Pahl, 721 Ninth St., North, Great Falls, Mont.

FOR SALE—Leases and settled production in Warren, Allen and Barren Counties, also drilling propositions in shallow territory. Warren and Allen Counties oil is now posted at $2.10 to $2.40 per bbl. and Barren County at $2.85. W. P. Harley, Bowling Green, Ky.

DRILLING PROPOSITIONS in western Kentucky. Blocks of 1,000 to 2,500 acres given free for an offset test well. Drilling cost is small. Territory selected by experienced operators in this section. Full data given responsible companies or operators. Also settled production for sale. R. E. Cope, Bowling Green, Ky.

YOU have your organization and can give good service. Does the Billion Dollar Petroleum Industry know it? Have you made it easy for oil men to order from you? If not, the surest and best way to promote the merits of your company is to use The Oil and Gas Journal—the oldest and best petroleum publication in the world.

OIL LEASES and royalties for sale by owner, Section 36, Township 8, Range 14; also on joining lands, well now drilling to 3,500 feet, 1½ miles to 36, by large oil company.
W. R. SCHMEIL
Osborne, Kans.

LEASES—PRODUCTION

FOR SALE or lease—300 acres tested on all sides, Bartlesville sand. John McQuiston, Route 7, Independence, Kans.

FOR SALE—167-acre lease, 9 wells on pump; good equipment; one-eighth royalty; 630 feet first, 864 feet second, and 915 feet third sands. All wells in first sand. Price for quick sale, $6,000. If interested write J. R. Cline, Iola, Kans.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

HARTMAN & SARGENT — Leases, royalties, production, bought and sold. Dept. A. Geological and property management, Dept. B. You'll like our service. Office, Lawrenceville, Ill.

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6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

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Tulsa, Oklahoma

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W. T. Waggoner Bldg.
Fort Worth, Tex.

LEASES
Leasers and Drillers: Why not western Kansas in Sherman County? Several wells now being drilled, good oil showing around Goodland. Free acreage, royalty basis. The time to act is now. D. Weidner, Box 1967, Los Angeles, Calif.

FOR SALE—80-acre gas lease, 1 well and locations for 2 more, good production, near Moline, Kans. Address Rev. Felix V. Hanson (trustee), Jamestown, N. Y.

DEEP TEST WELL NOW DRILLING IN NORTH FLORIDA
T. F. Bray and associates from Arkansas are now drilling a deep test well for oil and gas located on the Monticello Dome in Jefferson County, Flordia. Send for structural and drainage map; also geological report.
Geology by Dr. S. T. Wisby of Little Rock, Ark. We desire to hear from all of those who are interested in purchasing leases and royalties around this well.
T. F. BRAY, TRUSTEE
Box 127 Monticello, Fla.

HAVE BUYERS for flush or settled production in Oklahoma and North Texas. Vern R. Hartman, P. O. Box 442, Dallas, Tex.

FOR SALE—Leases, production and royalties in Barren County, Kentucky. Shallow drilling, high gravity oil, long life wells. Have some leases adjoining production. Small rentals. L. W. Preston, Glasgow, Ky.

LEASES—PRODUCTION

WOULD like to hear from parties wishing to invest in Oklahoma. Wildcat leases and royalties. W. H. Adams & Co., 203 Clinton Bldg., Tulsa, Okla.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

LEA COUNTY, southeastern New Mexico; for sale, 2 state leases, 16,000 and 18,000 acres, low price, entire leases. Box 692, Albuquerque, N. Mex.

TEN-YEAR oil leases. No rentals. Crockett County, Texas. Send for true map. Paul Konz, Box 291, Fort Worth, Tex.

AUCTION SALE of oil and gas mining lease on Indian Tribal Lands. An oil and gas mining lease on the following described Indian Tribal Lands will be offered for sale at public auction to the highest and best bidder at the office of the United States Field Clerk at Wewoka, Okla., July 15, 1926, at 2 o'clock p. m.: SW¼ and S½ NW¼ of Section 5 and the E½ SE¼ of Section 6, all in Township 8 North, Range 6 East, 320 acres, being the land reserved for the Mekusukey Mission School located about four miles south of Seminole, Okla., on the C. R. I. & P. R. R. No bid will be considered for less than the bonus consideration of $50 per acre, together with the first year's advanced royalty, required leasing and filing fees; the lease to be for a period of five years, and as long thereafter as oil or gas is found in paying quantities. No drilling will be permitted within 500 feet of any building on the land described. For further information communiate with the Inspector in Charge for the Five Civilized Tribes at Muskogee, Okla. H. H. Fiske, Inspector in Charge.

ROYALTIES—PRODUCTION

WOULD LIKE to hear from parties wishing to invest in Texas wildcat leases and royalties around drilling wells. F. P. Tracy, 406 Wheat Bldg., Fort Worth, Tex.

WANTED—Producing royalties Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

WANT producing royalties in Arkansas and Louisiana. Give all details. James H. Dugan, Randolph Hotel, El Dorado, Ark.

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Leases and royalties in McClain and Grady Counties near the test now drilling in 6 North and Range 4 West. C. T. Rice, Purcell, Okla.

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REFINERY ENGINEER—University graduate, with practical experience in plant maintenance, construction and operation, desires to locate with Mid-Continent company. 26 years of age, married; references. Box B-346, The Oil and Gas Journal, Tulsa, Okla.

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TULSA, OKLAHOMA

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WHO WANTS to drill my 40 acres in LaSalle Parish, La., Section 25, and give me half the oil? W. H. McDade, Conroe, Tex.

DEVELOP YOUR OIL PROPERTIES

Sell stock, units or leases quickly, economically. Square shooters only need give details; 25 years' experience behind plan. Northcliff, 28 W. 44th, St., New York, N. Y.

FINANCING AGENCY wanted to handle entire new corporation issue covering a substantially proven gold-silver mine in Sonora, Mexico. Address R. O. Meents, 325 South Ardmore Ave., Los Angeles, Calif.

BUSINESS OPPORTUNITY

FOR SALE

Residential estate located in most desirable section of San Antonio. Exceptionally large brick home, very wide verandas, magnificent hallway and stairs, library, music room with pipe organ, dining hall, eight bedrooms with bath and dressing room with each, large conservatory, four servants' rooms in house, four-car garage with four servants' rooms, 70 acres or more of land with eight-inch and smaller cast iron water mains laid throughout. Wonderful view of surrounding country. Shown by appointment with owners only. No brokers. Address 115 Elizabeth Road, San Antonio, Tex.

WABASH DRILLING CO., solicits your work. We maintain 10 strings of cable tools and will furnish estimates on work in any cable tool country. Bring on your wildcats. Wabash Drilling Co., office, Lawrenceville, Ill.

THE SMALL SUM that it costs to insert an advertisement in the Classified Section of The Oil and Gas Journal enables you to place your desires in the minds of men who are always interested in a good proposition.

MINES FOR SALE—If you are looking for some valuable mining property, write me. Etienne A. Ritter, 408-9 Empire Building, Denver, Colo.

WANTED

WANTED—Several first-class drilling blocks by reliable party, must have good geology and stand close examination. Send full details together with maps and geology in first letter. Address Box 1327, Bartlesville, Okla.

BROKERS to underwrite meritorious stock issue on producing oil properties. Justify payments, large dividends. By appraisal, assets $239,000, competent engineers. Sales used for expansion purposes. Box B-354, The Oil and Gas Journal, Tulsa, Okla.

WANTED
Second Hand

Small absorption plant for extracting natural gasoline from 350,000 cubic feet each 24 hours.

Must be modern equipment. State lowest price and give list of items. Box B 347, The Oil and Gas Journal, Tulsa, Okla.

WHO WANTS to open up an oil field near Conroe, Tex., between Humble and Mexia? W. H. McDade, Conroe, Tex.

WILL BUY natural gas plant, up to 1,000 consumers. Box B-331, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Three or four cylinder rigs, preferably equipped with drill stem and make and break or double deck rotaries. Would like to locate Shell Goodwin, Shelly White, Frank Baquett, Jesse Reese, Puss Adams or Lew Williams. Will receive mail during June at Burkburnett, Tex., or at Box 72, Pasadena, Calif. D. O. Credille.

FOR SALE—DOGS

HUNDRED hunting hounds cheap. Buy early. Catalogue. Kaskaskia Kennels, Herrick, Ill.

ORCHARD AND FARM LANDS

TWO FEE ranches. M. F. Beaumont, Hartley, Tex.

XUM

Chicago Gasoline Trade Disappoints

Weather and Desire for Immediate Business Keeping Jobbers Aloof. Hear Refiners Have Overrun, Stocks Increase

By J. B. Waldo

CHICAGO, June 19.—The demand for gasoline has been disappointing during the week. According to the best accounts the country jobbers have ordered in more gasoline than they have sold and the result is that not needing or in many cases having no room for additional supplies, they have been slow to order in the spot market. Their takings on contracts have in many cases also been reduced. The reduced distribution is attributed to the weather. Another thing that has contributed has been that some refiners and marketers, although in this case the chief offenders seem to be the refiners, have quoted direct to the trade on the basis of the lowest resale prices and have indicated a desire for immediate business that seems to the jobbers to show lack of firmness in the situation generally. The marketers who had ordered for delivery over the month bought in many cases at prices above the present market and have gasoline coming to them that will cost them 11½ cents and upwards. Under this condition the marketer has not been cutting prices except as an extreme effort for business.

For Immediate Needs

The word has also been passed around that the refiners have overrun the demand and that stocks are increasing so that the jobber has returned to the plan of ordering for immediate needs only and at present these needs are not large. Reports from the state inspectors and treasurers indicate that the April sales were not showing the increases made over the corresponding month of last year that prevailed earlier in the year but weather conditions in the Middle West were at their worst in April. The condition seems to be that both refiners' and jobbers' storage is better filled than either would like to have it and the present is a time of waiting for the consumption to catch up. Reductions in runs would help, not that they would immediately reduce the supplies, but they would make the jobbers who are now so sure they will be able to buy more cheaply later in the season less positive of their ground.

The actual business done during the week has been spotted and will bulk less, it is generally believed, than during the preceding week. There has been very little large buying. The source of supply for the Taxicab Co. has been asking for bids for approximately 50 cars of either 56-58 450 or the straight Navy. The report in the market is that one large refiner offered to supply it at 10¾ cents, and a still larger stated they would meet and better the best bid received from any responsible source. There is nothing definite obtainable and will not be until the order is placed. Towards the close of the week there was some inquiry for gasoline for export through brokers who did not make the name of their buyer known, but the inference was drawn from the specifications that it might be for the Asiatic Petroleum Co. The grade wanted was a 60-62 with a 97 per cent recovery in the distillation test. There have been free offerings of the higher gravities largely from North Texas, but some from the group and prices are little above the quotations made for the Navy grade. At the present writing 11¾ cents is being asked for Navy by several large refiners and some marketers, but jobbers claim they are able to do better than this price. Business is booked by others at 11½ cents. Earlier in the week the 11½-cent price was made by some refiners and withdrawn and 11¾ cents quoted instead, but this price could not be maintained in the face of the apathy of buyers and the desire of some refiners to move their product as they feared apparently from reports made that they might not better the price by holding for higher quotations. On the other hand salesmen and managers of refining organizations who have visited the trade in the West and Northwest, state that the jobbers do not seem to be attracted by concessions, they are waiting for a larger demand, not a lower price, and even when expecting the latter would prefer to have a larger business at higher prices as they fear the declining market at the plants for gasoline and the slow movement to motorists will result in price cutting, open or secret. Natural gasoline in this market has been quiet and reports from the field are of increased supplies and lower prices.

Kerosene Lags

Kerosene is in very light demand and sellers say that if they ask a jobber for an order he is very likely to offer to sell the refiner a car or two for which he has no present use. It is hoped by the jobbers that the early harvest time will cause a better consumption, but supplies held by jobbers are believed to be ample for some time. There have been free and persistent offers from refiners to sell, and in one case a price of 7 cents was quoted out of North Texas, but as no specifications were given with the quotation it is believed the kerosene was some of the off-color kerosene previously pushed for sale. The market is very skeptical about the price holding and it is freely predicted that another week will see the price for 41-43 gravity kerosene down at least another half cent from the present market, which may average 7¾ cents, although there is more and more kerosene being offered the trade at less than that price and very few holding for the quotation of 8 cents which was claimed by refiners to be the rock bottom. Indeed one large refiner quoted 9 cents as his price, but admitted he had not had a call for kerosene for a week or more, his trade being largely on contracts.

Furnace Oils

In the group of furnace oils there is an occasional sale of a car of straw distillate at 4½ cents or an eighth more, as it might happen, but there is little present demand. Some very high-grade distillate, almost water white in color with a flash of 160 and gravity of 38-40, is being offered at 4½ cents for spot sales, and quite a quantity of straw distillate is available at this price, probably 100 cars all told, but while the jobbers all talk of higher prices, and some have purchased a little gas oil which they will hold if they cannot dispose of it, no one seems to want to stock up on straw distillate at even these prices. Much of this could be moved to customers' tanks in 60 days and the carrying costs would not be large, but in spite of all the talk about much higher prices for furnace oils next season, no one seems to want to take the risk involved in buying a supply at the present market. There are many who believe there will be a sufficient supply of furnace oil and while the price will be some higher it will not be any such prices as have been talked by some refiners who seemed to think that a big gasoline demand would run through the fall and winter. One refiner, when asked if he did not want orders for stove distillate said that he did, that they came at a time when gasoline runs were falling off rapidly. He finally said it was probable he would run quite a lot of distillate and that if he did others would do the same, as the same reasoning would apply to other refiners. But there may and probably will be changes in specifications that will make any such distillate as that mentioned command a better price than the regular offerings. There are indications that the furnace oil, of which quantities will be run for next season, will not be treated for color, that the gravity will be around 36-38 or 37-39 with no flash specified less than 190 degrees. This is good enough for many makes of domestic oil burners, but not for some of those which have been "best sellers" for several seasons.

Gas Oil Steady

Gas oil is fairly steady in tone. The industrial buying is small and while distributors are taking some gas oil they are not large buyers. Reports as to purchases by gas companies vary. One large source of supply for the gas companies states that business with the gas companies is good, that they are taking oil freely, but this is not the general statement, and several who seek the business of the utility companies say the buyers are ordering very unwilling and permitting their storage to drop to low levels. There is apparently some decrease in the demand for gas oil for cracking as straightrun gas oil is now offered, if not in large volume still in quantities that are much more ample than a month ago. Refiners with cracking stills have offered straightrun gas oil and it has been bought at 4 cents or about an eighth over the price for cracked gas oil at refineries, although some 3¾-cent oil has been bought by local dealers. There is no expectation of any material decline in gas oil and it might even work a little firmer. If the refiner follows his usual plan there will be less oil cracked after the middle of July, but the general introduction of the cracking plants is working changes not only in methods of refining but in the usual plans of operation.

Fuel Oil Dull

Fuel oils are dull and barely steady in price. Some are a little lower. Smackover seems to be holding up the market right now, many oil men claiming that if Smackover can be sold at $1.20 there must be at least as much received for any grade of refinery fuel oils. Yet this is not true in this market today. The local market is showing less strength in the heavier oils than the refinery centers, due chiefly, if not wholly, to the desire of some of the larger nearby plants to dispose of accumulations of fuel oil chiefly if not wholly in the heavier gravities below 16 degrees. Manufacturers are learning to use these heavy oils and the lighter fuel oils seem to be gradually fading from the picture.

In a great many cases manufacturers and other users of fuel oil have been obliged to accept the 18-22 or 20-24 gravities for their accustomed 24-26. In some cases they were aware of the substitution before delivery was made. In other cases they discovered it when the oil was tested at their plants. There was a lot of trouble made in some cases, but the users learned they could burn the heavier oils and they are being taught that for some purposes and in some plants at least they can use the very low gravity oils. These work best in summer, and the refiners hold their runs of these oils for summer consumption. The demand is strictly of a routine nature. Dealers in fuel oils report there are very few sizable orders placed, buyers holding back their orders and reducing their purchases to actual necessities. Some accept the situation gracefully and merely use the usual methods of purchasing companies to get the best price possible, while others are actually "grouchy" and when they do finally give an order it is with the intimation that if prices do not drop something is going to be done about it. The most common threat right now is that they will substitute gas, and the gas companies are making the most of their opportunity not only by greatly increasing their producing and distributing facilities but by experiments with various types of gas burners in different industries. Homes have been built along special lines using the various methods of insulation and it has been shown that by such construction that not only can the home be maintained at a comfortable temperature with very little heat in the coldest days of winter, but that the same insulation makes a cool house in summer. There are numerous angles to this form of heating which permit of savings in construction costs. The writer has gone over a six-room house heated by a small gas plant which occupies a floor space of less than 18 by 24 inches and not much over waist high. No cellar was required as no fuel was stored, which made a considerable saving in cost. The gas management claims they will be the chief source of heat in, some say, 10 years, and they are certainly working intelligently towards that end, while the domestic oil burner people seem to be working without any system or definite plan, one reason being that the domestic oil burner industry has not yet been able to finance itself adequately.

The local price situation is unsettled both by the methods of the buyers and the uncertain demand and the more free offerings of fuel oils. It is now possible to purchase straightrun 24-26 and 26-30 oils if wanted and even the higher gravities can be had and at prices something less than the recent peak. The demand is light for industrial users of these grades who will not pay a premium for the lighter oils with the prevailing temperatures. Takings on contracts are about normal for the season.

The Smackover price is held rather firmly at $1.20, with a little variation either way in occasional cases but some of the heavier fuel oils are being actually sold at less than this price. Practically any fuel oil lower than a straight 24-26 can be purchased at $1.20 and some sales of 18-22 were made at $1.17½, while 24-26 was offered for resale in limited quantities at $1.22½ from the field. The sales manager for a large refining organization while stating that the market for all grades lower than 24-26 was $1.20, also said he would undersell that price to get the business but declined to name his lowest price. There is a lot of this sort of selling going on. One of the larger companies notified its salesmen early this week that its price for Navy gasoline was 11¾ cents, but if necessary to get the order would accept 11½ cents. The average road salesman always quotes his lowest price first and then wires for a lower price if he cannot land the order without cutting the low price.

Lubs Steady

Lubricating oils are steady to firm. There is little or no change in the demand or the market. Some large sales are reported and there seem to be buyers willing to take quantities when they can secure even a small concession in price for the size of their order. It is noticeable that some of the foreign countries that are securing their supplies of motor fuels and burning oil from some other source than this country still continue to import the full quantity of lubricating oils. The industrial demand is very fair while the sales of motor oils at stations are showing some improvement.

Tankwagon

There have been no general changes in the tankwagon prices over the terri-

tory of the Standard Oil Co. of Indiana, and the talk of any such change has dropped the easier market at the refineries. There is no such bulk of business as would enable higher prices to be held and the fear is expressed by some that if the present market at the plants does not strengthen, price cutting will be resumed. There are sporadic cases of price cutting here. One garage has a sign out, "Gasoline 15 Cents." Another offers gasoline "At the regular tankwagon price." The actual tankwagon price is still debated. The Standard and most of the companies recognize the 19-cent price as the tankwagon price and the 18-cent price made for 100 gallon dumps as a quantity price. But some companies still call the 18-cent price tankwagon and base contracts on it. The writer was shown a bill from a large Group refiner on a contract at 11.62 cents, being a 4-cent margin from the price of 18 cents less the freight of 2.38 cents per gallon. This is a high grade Navy gasoline and even on this some would claim they could sell at a profit at 15 cents. But generally there is little organized price cutting that is by larger companies. Locally it seems to be done by garages to a great extent who use it as a bait for business.

EASTERN PRICE SITUATION STEADY BUT WEATHER LESSENS CONSUMPTION

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York

NEW YORK, June 19.—Disappointing weather was still the rule in the East during the past week, and although to all appearance the refined oil markets maintained a strong trend, as to prices, in some quarters it is stated consumption is not coming up to expectations. Marketers still hope for a turn in the weather which will make up for the time already lost, but as week after week of cold weather continues, this hope becomes more remote.

So far as could be seen, the price situation so far as gasoline is concerned has not changed. Tankwagon quotations have not been changed at any important point, and refinery prices are reported to be firm. Service station price cutting is about the same as usual, with no evidence of too severe competition yet.

While the general situation in gasoline cannot be said to be unfavorable, there are certain underlying conditions which cannot be overlooked in a careful analysis of the outlook. In the first place, the continued unfavorable weather must be taken into account; secondly, the apparent lack of a "scramble" for gasoline on the part of the big refiners, who seem to be well supplied with both gasoline and the stock from which it is made.

Partly offsetting these factors are a strong market for fuel oil, gas oil and kerosene (although the latter seems to be weakening somewhat for the first time this year), and the larger number of motor vehicles in use, making for bigger gasoline consumption irrespective of weather conditions. In addition, the trend of crude oil prices seems to be upward. The outcome of Panhandle oil field operations is looked upon as the biggest factor in determining whether crude oil prices in the future will go upward or downward.

Kerosene

The eastern kerosene market seems to be holding up well despite reported weakness in the Middle West and Southwest. This is probably due to the heavy domestic consumption of both kerosene and furnace oil in this section because of the cool weather. There has been a small fractional easing off of refinery prices, it is true, but this has been largely sympathetic.

Gas and Fuel Oil

The market for gas and fuel oil continues firm. There have been no further changes in quotations. Bunker oil is in somewhat better demand.

Lubricating Oils

Cylinder oils are in better demand. Until the western Pennsylvania situation improves, however, no upturn in prices can be expected. Red and pale oils are moving briskly, and there is an unusually good demand for white neutral oils.

Petrolatum

Petrolatum is unchanged, with demand still slow and prices at about the bottom point of the year.

Oil Export Market

The oil export market was quiet during the past week, with no bulk shipments and only a fair movement of oil in cases. This is considered only temporary, however.

While the outlook for the immediate future in the oil export market is good, due to heavy demand for products abroad, the trade is somewhat worried regarding the tendency abroad to place artificial restrictions on petroleum consumption, either through arbitrary measures or import barriers. Spain is reported to have increased the import duty on petroleum products, while a radical restrictive measure is pending in France.

There doubtless has been a big rush of petroleum products to the principal European products, and stocks abroad are piling up somewhat. Restrictive measures would tend to cause a serious blow to the American oil export trade, it is believed in some quarters, under the circumstances.

The British Strike

It is generally known that the British general strike caused a big gain in oil consumption. However, actual figures of consumption have come to hand, which place the use of gasoline at approximately 2,000,000 gallons a day, compared with a normal demand of about 1,040,000 gallons a day—approximately double.

The "Daily Express," of London, says: "Almost double the normal quantity of gasoline was consumed in Great Britain each day during the general strike. Gasoline was the blood of the country. During the paralysis of rail and water transport it kept the nation alive and contributed in the most indisputable fashion to the eventual breakdown of the strike.

"It is the boast of the oil companies that not one tiny hamlet throughout the country went without its supply of motor spirit during the strike. No increase of price was made to compensate for the added cost of transporting all supplies in tank trucks. The temporary loss of thousands of railway tank cars was only the first of many difficulties to be overcome."

The "Investor's Chronicle" of London comments editorially: "Petrol really saved us; road transport served until the railways could be got going."

While the gain in gasoline consumption during a strike is to some extent only a temporary gain, these episodes tend to emphasize the growing dependence of civilized countries upon petroleum.

Asphalt Abroad

Continued heavy shipments of petroleum asphalt from New York call attention to the apparent gain in road building in the various foreign countries to which these shipments are going, principally Scotland, Australia and New Zealand. The extension of asphalt highways is linked closely with the use of motor vehicles in these countries, and it all goes to indicate the growth in importance of motor transportation.

Exports during the past week aggregated 3,301,725 pounds, against none the preceding week, and 3,260,700 pounds two weeks ago.

Principal Exports

The following table shows principal exports of petroleum and petroleum products from New York reported during the last three weeks (figures in gallons unless otherwise noted in parentheses):

	Week Ended June 16	June 9	June 2
Bulk	.....	.....	5,470,676
Cases	1,915,880	2,256,140	1,894,110
Kerosene:			
Bulk	.....	806,377	1,210,224
Cases	1,356,800	2,795,450	1,000,300
Gas oil:			
Bulk	.....	746,638	353,506
Lubricating oil:			
Bulk	.....	.....	1,990,678
Barrels	1,598,300	1,345,350	1,147,550
Cases	283,300	287,770	172,550
Lubricating grease:			
Barrels (lbs.)	663,300	740,250	.....
Paraffin wax:			
Bags (lbs.)	1,971,640	2,748,900	768,020
Barrels (lbs.)	.....	901,550	153,425
Petroleum asphalt:			
Barrels (lbs.)	3,301,725	.....	3,260,700
Crude oil:			
Barrels	.....	67,250	.....

The foregoing shipments include lots of 500 bbls., 1,000 cases, or more.

Tanker Market

Oil tanker charter rates continue strong. with renewed activity for July loading.

New fixtures include the following:

Tanker ——, California to New York, crude oil, 80 cents a barrel, July loading.

Tanker W. W. Mills (Am.), Gulf to north of Hatteras, 40 cents a barrel, clean oil, June-July loading; two ports, 42 cents.

Tanker Lucellum (Br.), 6,000 tons, Gulf to United Kingdom-Continent, 27s. 6d., clean oil, July-August loading.

Tanker Java (Nor.), 5,225 tons net, Venezuela to United Kingdom-Continent, 26s., July loading.

Tanker Shirak (Br.), 7,500 tons, Gulf to French Atlantic, 27s. 6d., clean oil, July loading.

Tanker Tiverton (Br.), 2,457 tons net, 12 months time, 8s., January-February.

Oil Receipts Decline

Estimated receipts of crude and refined oil at Atlantic Coast ports for the week ended June 16 were 3,217,000 bbls., a daily average of 459,000 bbls., compared with 4,602,000 bbls., or 657,000 bbls. daily, for the week ended June 9. The decline in daily average amounts to 198,000 bbls.

Receipts from the Gulf Coast were 1,956,000 bbls., a daily average of 279,000 bbls., against 2,726,000 bbls. the preceding week, a daily average of 389,000 bbls. The decline in daily average amounts to 112,000 bbls.

Receipts from California amounted to 418,000 bbls., a daily average of 60,000, against 813,000 bbls., or 116,000 bbls., daily, a decrease in daily average of 56,000 bbls.

Imports amounted to 843,000 bbls., or 120,000 bbls. daily. In the preceding week imports totaled 1,063,000 bbls., or 152,000 bbls. daily. The decline in daily average imports was 32,000 bbls.

Of the imports for the week ended June 16, all came from Mexico, while in the week ended June 9, 864,000 bbls. were from Mexico and 199,000 bbls. from South America. Daily average imports from Mexico, therefore, show a decrease of 3,000 bbls. compared with those of the preceding week.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific coasts of the United States, and imports, for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended June 16	June 9	June 2
Gulf	279,000	389,000	280,000
Pacific	60,000	116,000	55,000
Imports	120,000	152,000	148,000
Total	459,000	657,000	483,000

Daily Averages by Months

	Gulf	Pacific	Imports	Total
1926:				
May	318,000	66,000	139,000	523,000
April	326,000	92,000	146,000	564,000
March	317,000	97,000	178,000	592,000
February	332,000	73,000	122,000	527,000
January	279,000	59,000	96,000	434,000
1925:				
December	298,000	56,000	103,000	457,000
November	259,000	36,000	92,000	387,000
October	249,000	36,000	102,000	387,000
September	306,000	66,000	76,000	448,000
August	291,000	54,000	90,000	435,000
July	391,000	63,000	107,000	561,000
June	379,000	66,000	118,000	563,000

The foregoing estimates are based on the carrying capacity of incoming oil-laden tankers.

MAKE THREE SURVEYS IN ALBERTA FIELDS

CHATHAM, Ont., June 19.—The Geological Survey of Canada is this season undertaking the most extensive work in connection with the Alberta oil fields yet attempted in the Canadian West. Five geological parties, and three topographical survey parties, will be in the field.

Probably the most important work will be a geological survey of the Turner Valley and structures to the northwest to be carried out by Dr. G. S. Hume of Ottawa, assisted by A. J. Childerhose, R. P. Quinn and G. McCartney of the University of Manitoba. Doctor Hume, in addition to examining the Turner Valley, will prepare a new sectional and areal map of the structure there. He will also carry on work in the Jumping Pound and Moose Mountain districts.

Dr. W. S. Dyer of Ottawa has commenced work in the area between Townships 9 and 16, which roughly includes the Sweetgrass, Foremost, Pincher Creek, Magrath, Indian Reserve and Claresholm districts. Dr. M. Y. Williams of the University of British Columbia will work through the corresponding area in Townships 1 to 8 in Alberta and extending to the 109th meridian in western Saskatchewan. The work will mean a complete revision of the data collected in previous surveys. Doctor Dyer will start at Carmangay and work east to Medicine Hat, covering the Gleichen and Bassano districts later in the summer as well as part of the Red Deer River valley. Further east, Doctor Williams will give the Sweetgrass arch structure considerable attention, and devote some attention to mapping the minor arches.

Dr. F. H. McLaren of Ottawa will work in southwestern Saskatchewan, a district practically unexplored so far as the Geological Survey is concerned; while Dr. P. S. Warren of the University of Alberta will go over a large area in the vicinity of Battleford, Sask., east and northeast of the Ribstone-Blackfoot anticline.

Of the three topographical survey parties, one in charge of D. A. Nicholls and J. A. McDonald will cover as much territory as possible south of the Bow River and west of longitude 114.30, while A. C. Bridgeland will work east of that longitude. A. C. T. Shepherd will cover the Turner Valley.

PAN AMERICAN TO WORK MEXICAN RAIL WELLS

NEW YORK, June 19.—Pan American Petroleum & Transport Co. has concluded an agreement with National Railways of Mexico under which it will develop all the railway's oil properties. This is regarded as significant, as these are nominally government lands, and this contract indicates the petroleum situation is being satisfactorily adjusted.

It is understood that the railway company and Pan American Petroleum & Transport Co., share together the cost of development; that the railway company will secure its fuel requirements from this source, and that any excess oil will go to Pan American Petroleum & Transport Co.

ROY JOHNSON MARRIES

HUNTSVILLE, Tex., June 18.—Roy Johnson, capitalist, oil operator and vice chairman Oklahoma State Highway Commission, was married to Miss Elizabeth Thomason, a daughter of Dr. and Mrs. James W. Thomason, at 7:30 p. m. Thursday, June 17, Bishop John M. Moore of the Methodist Episcopal Church of Dallas officiating, at the home of the bride's parents. The bride was attended by her sisters, Misses Kate Sayle, Sue, Emily and Margaret Thomason, and the groom by Edward Gault, his business partner, of Ardmore, Okla. Returning from their honeymoon the couple will make their home at "Oakcrest, near Ardmore.

Cracking Unit Operation Automatic

Control Instruments of Jenkins Unit at Independent Refinery Simplify Operations. Plant Has New Features

By C. O. Willson

At the refinery of the Independent Oil and Gas Co., located at Okmulgee, Okla., there has been in operation during the past month a cracking unit which incorporates several features which are indicative of the present trend in refinery processing at high temperatures and pressures.

The cracking unit is one phase of an improvement program at the refinery formerly owned by the Allied Refining Co. The Independent Oil and Gas Co. last year purchased the Allied plant and this year bought the refinery of the Indiahoma Refining Co. which adjoins. The company has practically completed a rebuilding and enlargement program

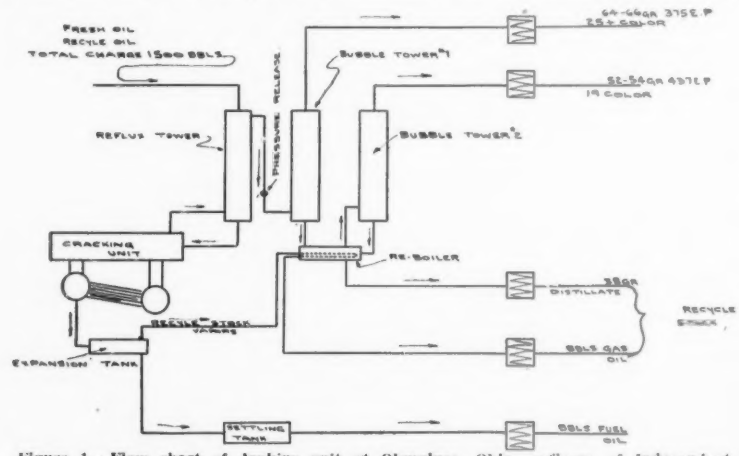

Figure 1.—Flow chart of Jenkins unit at Okmulgee, Okla., refinery of Independent Oil & Gas Co.

which has combined the two plants. The plant is now operating on a 3,00-bbl. basis with a skimming capacity approximately twice as large.

Among the improvements has been the installation of equipment for a complete lubricating oil plant which will be described in a later article. The changes which have been made in all phases of the plant's operation during the past few months in order to secure the efficiency required in a modern refinery is a concrete example of the rapid progress made in manufacturing methods during the past two or three years.

Almost Automatic

Simplicity in design and operation, the latter aided by a variety of control instruments which makes the entire operation almost automatic, resulting in large yields of quality products, are the features of the cracking equipment. This unit is the last word in Jenkins equipment, a type of process to which several improvements have been made during the past year.

The control instruments were installed by the Brown Instrument Co., whose engineers co-operating with those of the Independent, Jenkins and Graver Corp., which installed the process, have made a special study of the utilization of automatic control instruments throughout the entire operation.

The results already obtained in the operation of the plant attest the value of the several innovations made. It is expected that both the throughput and ultimate yields will be increased. The first three weeks of operation the plant was forced to depend on an oil field boiler for steam due to the fact that the new boiler plant had not been completed. The small boiler did not furnish the steam pressure needed to secure the best operating results.

However it is certain that the unit which has a rated capacity of 1,000 bbls. daily will handle at least 1,500 bbls. daily with a minimum cycle of operation of 15 days. Both the throughput and length of operating cycles are of course dependent on the method of operation and quality of charging stock. A similar unit in Kansas recently had a record of over 800 hours on stream.

The mechanical features of the Jenkins process are generally known to plant operators and a detailed description will not be given here. The main features including the flow of liquids and vapors are shown in the accompanying flow chart. Since the first commercial unit of the Jenkins process was installed at the El Dorado, Kans. refinery of the Skelly Oil Co. three years ago, many improvements have been made although the main patented features of design and operation are the same.

Method of Operation

At the present time the fresh charging stock at the Independent refinery is a gas oil cut from the crude stills averaging about 32 gravity. The amount of fresh charging stock is generally about one-third of the total charge.

This fresh gas oil and the recycle stock which are mixed in the storage tank are charged first through the reflux tower where the liquid comes in contact with the vapors from the cracking still. Before the charging stock enters the reflux tower a small amount of hydrated lime is pumped into the charging line. This lime passes on with the charging stock and serves to hold all carbon formation in amorphous form and thus prevent any large accumulations in any part of the unit.

The preheated gas oil passes out at the bottom of the reflux tower to the horizontal steel drum of the cracking still. This drum as shown in the flow chart is connected by sluiceways to cross drums at either end at right angles to the upper drum. These cross drums are connected by 124 inclined tubes similar to those used in tube boilers.

Near the upper part of the rear sluiceway is a propeller driven by a 35 H. P. electric motor. Through the use of the propeller the charging oil is circulated through the shell and tubes of the cracking stills at a high rate of speed. The propeller is maintained at a constant speed of 435 r. p. m.

From the lower part of the front drum the liquid is drawn off to the expansion chamber. This is done in such a manner that the oil containing the carbon is constantly drawn off without interfering with the circulation in the main part of the still. In the expansion chamber the recycle stock vaporizes and the remaining liquid passes to the settling tank. In the latter tank the little carbon that is formed in the cracking operation settles out and the fuel oil flows to storage. The latter is an excellent grade of fuel oil of about 18 degrees gravity.

Recycle Stock

The recycle stock still in vapor form passes from the expansion chamber to the reboiler. There it vaporizes the heavy ends from the two bubble towers. Two streams are taken from the reboiler, one a distillate stock and the other gas oil. The two streams are blended and used as the recycle stock.

The vapors after coming in contact with the charging stock in the reflux tower pass to the first bubble tower. Between the two towers is a valve where the pressure is released. The vapors from the first bubble tower constitute the high gravity stream. This stream which meets export requirements for the Aviation grade requires no treatment except sweetening.

Just what percentage of the total gasoline output comes from each of the two streams depends entirely on the method of operation. In some plants there is a 50-50 split. In other plants the two streams are combined, the blend meeting U. S. Motor specifications. In a run at the Independent plant 80 per cent of the total production was taken in the high gravity stream. The gravity of this cut was 64.5 with an endpoint slightly above 375.

In the original Jenkins units only one bubble tower was used. The high gravity stream was taken from the top of the tower and the reflux from the bottom of the still constituted the pressure distillate which had to be rerun in order to secure a finished product. The Independent management decided to install the second tower with an arrangement as shown in the flow chart. Instead of rerunning the pressure distillate from the first and second towers in a separate operation this is accomplished with the reboiler using the vapors which make up the recycle stock to vaporize the pressure distillate.

The second bubble tower handles the vapors from the reboiler. The vapors from the reboiler pass to the second bubble tower. The gasoline from this second tower is a finished product except for treating with an endpoint meeting U. S. Motor specifications.

The foregoing briefly describes the operation of the unit with the exception of the control instruments.

Exclusive Features

Operators of the process point out several exclusive features which they state are responsible for the excellent results obtained. Probably the outstanding feature is the automatic time factor secured in the continued circulation of all the charging stock until it is brought to the desired temperature and time for cracking. This means that all the charging stock regardless of its cracking temperature or time is cracked with no over heating or waste.

Another feature is the quality of the recycle stock. This is due to the fact that this stock is obtained in the flushing action of the still rather than a residuum product secured after the cracking operation has been completed.

The lime treatment previously referred to reduces corrosion troubles to a minimum. It is claimed that the introduction of the lime in the charging stock is only possible when the oil is rapidly circulated. A recent investigation showed that there had been no corrosion in tubes which had been in operation for four years. This lime treatment and rapid circulation is also responsible for the fact that only a small amount of soft mushy carbon is formed.

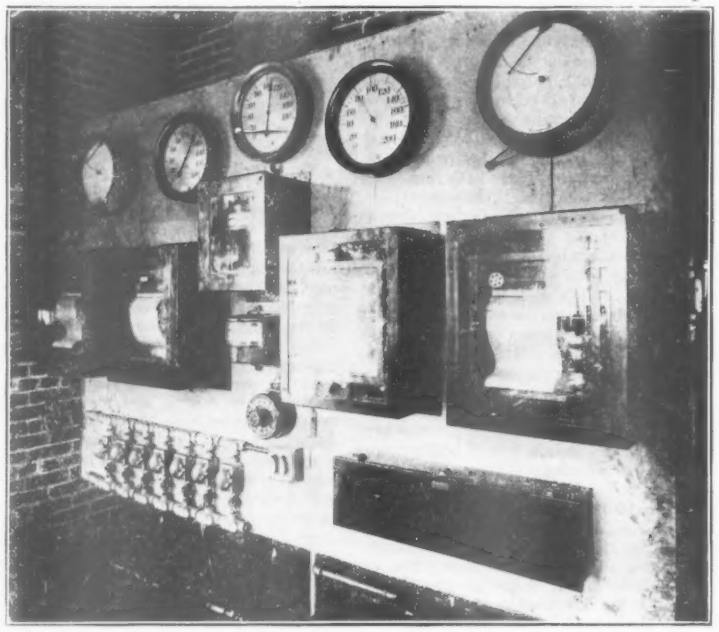

Figure 2.—Main control board of cracking unit located in pump house. Automatic control of operation centered at this point with exception of furnace control instruments.

Still another feature is the relatively small amount of fixed gases formed. These gases although sufficient to furnish fuel for the unit after the operation has started constitute only a small fraction of the total throughout. The total losses at other plants including the fixed gases which are utilized and the coke formed are as low as 2½ per cent of the total charge. The small amount of fixed gases is explained as a development of the automatic time factor and rapid circulation previously referred to.

Control Instruments

One of the interesting developments in refinery practices has been the widespread increase in automatic control instruments, including the various types

of gauges and control instruments. A few years ago the automatic control instruments were practically unknown in the refining world and the practical operators were inclined to consider the other instruments in the nature of ornaments rather than necessities.

The advent of cracking with its complicated processing brought about a change in this attitude. Operators were forced to realize that the less they had to depend on the "human factor," the better their chances of efficient operation with less hazard.

In the operation of the Jenkins unit at the Independent refinery, there is an illustration of the maximum development in the use of control instruments. The accompanying picture (Figure 2) shows the main control board conveniently located in the pump house under the condenser boxes.

Here the operator at a glance can determine the exact status of every phase of the plant's operation including the temperature of the furnace. The control instruments for the latter are located in a small building in front of the still.

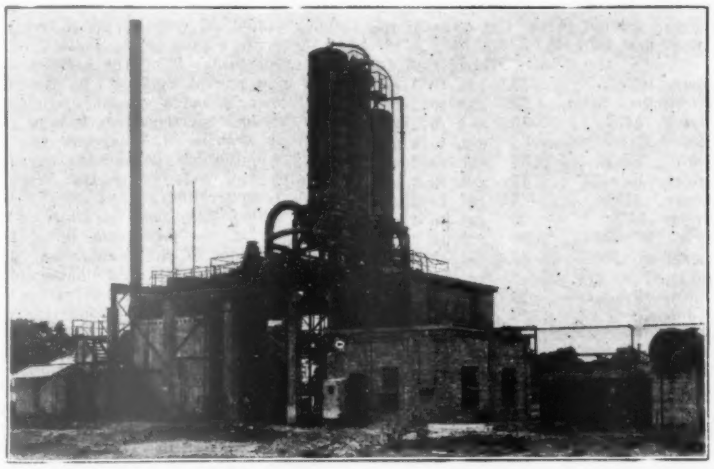

Figure 3.—General view of cracking unit at Okmulgee refinery.

The top line of instruments shown in Figure 2 consists of pressure gauges. In order, from left to right, they are the still recorder, still indicator, pressure at release valve, pump pressure of charging stock and steam pressure at plant.

Below are the control instruments. The first instrument (left to right) maintains a constant temperature at the top of the first bubble tower and the second instrument serves the same purpose for the reflux tower. The third instrument maintains a constant pressure at still by regulating the flow of vapors from reflux tower. The fourth instrument maintains a constant temperature at top of second bubble tower and the last instrument regulates the temperature of the vapors leaving the reboiler coil.

Beneath these instruments is the checking box by which the operator can check regularly all instruments to determine whether they require adjustments or repair for satisfactory operating conditions.

Use of Instruments

Most of these instruments are commonly known among the operating fraternity. In the top the two bubble towers are coils. Separate pumps circulate oil through these coils and by means of the automatic instruments just described any desired temperature is maintained in the top of the towers where the vapors pass out. Thus the endpoint of the finished products is automatically regulated.

By means of Fisher governors a constant pressure is automatically maintained at the charging pumps. This determines the throughout of the plant and establishes the operating factor to which all other instruments are adjusted. The steam gauge merely indicates the steam pressure at the cracking unit.

The most important and newest of the instruments is that which regulates the still pressure. This is an extremely delicate control not previously considered practical in cracking operations.

It will be noted that this regulation takes place at the release valve after the vapors have passed through the reflux tower. It is operated on the principle that variations in the vapors coming over from the reflux tower reflect changes in still pressure.

This instrument is adjusted so that it is not actuated by minor changes arising from normal operations. Any slight variation above or below the normal pressure is automatically regulated by either decreasing or increasing the opening in the valve. Should the pressure increase above what the operators consider normal operating conditions it would cause the mechanism to open wide in a few seconds. Thus, this regulation assists in maintaining normal operation and also provides for emergency conditions regardless of the human factor.

In the case of the reflux tower the control centers around the temperature of the vapors leaving the tower. By means of a valve mechanism the flow of charging stock to the tower is regulated in accordance with the temperatures of the vapors. In this manner the rate of flow of the incoming fluid is adjusted to the outgoing vapors.

Furnace Regulators

Two instruments are used in obtaining maximum efficiency and uniformity in furnace operation. On opposite sides of the combustion chamber are two thermocouples. Each is connected to a control pyrometer. This control pyrometer varies in turn the fuel supply to each of the two burners. By this means not only is a constant temperature maintained in the furnace but also the two sides of the furnace are balanced.

This uniformity in furnace temperature is secured without sacrifice of good combustion conditions by means of a second automatic regulation. The proper amount of fresh air is automatically permitted to enter the combustion chamber in accordance with the state of combustion as indicated by a CO_2 control meter.

The furnace is equipped so as to recirculate part of the flue gases. With this equipment the fresh air is forced into the furnace. The CO_2 instrument automatically regulates the speed of the steam turbine which supplies the fresh air.

This regulation which assures the maximum combustion efficiency is new in refinery practice and with the still pressure regulation previously described are among the novel features of the Jenkins unit at the Independent plant.

ROCKY MOUNTAIN AREA

(Continued from Page 56)

on Section 24-40-79 at 1,805 feet and will make an average producer.

The Wyoming Associated Oil Co. completed a first sand well on Section 26-40-79 at 1,440 feet and this will also make a small producer. On the same section the same firm brought in another well at 1,475 feet that will make 20 bbls.

The Midwest Oil Co. and the Wyoming Associated Oil Co. have a producer good for 30 bbls. on Section 25-40-79 at 1,835 feet.

The Salt Creek Consolidated Oil Co. has a second Wall Creek sand well on Section 31-40-79, that will do 25 bbls. at 2,112 feet.

The Midwest Oil Co. completed a producer of nominal size on Section 14-40-79 at 1,993 feet and one on Section 26-40-79, at 1,493 feet. The same company also drilled in a 20-bbl. well on Section 27-40-79 that will make 20 bbls.

Sunburst Operations

The Sunburst Field failed to bring in any large gusher wells the past week, but 12 wells found production and there were 2 dry holes drilled. The attention of the operators appears to be centering on the southeast part of the field and more activity is manifest there than in any other direction. The Pondera Valley Oil Co.'s well on Section 17-34-1, found production in the Ellis sand at 1,410 feet and will make 60 bbls. This well is about 2 miles ahead of production on the southeast side.

The gusher reported last week for the Ferdig Oil Co. has increased since last week to 1,200 bbls. daily. This oil is coming from a stray sand above the Ellis and not from the Ellis sand. The O'Neil gusher, also reported last week and an offset to the Ferdig well, is also increasing its production in the same manner.

Taking Up Naphtha Line

The Midwest Refining Co. is taking up some of the old 3-inch naphtha line between Casper and Salt Creek. This line was laid in 1918 to carry gasoline from the Salt Creek plant to Casper and was the first welded line ever laid for this purpose. It has given complete satisfaction, except that the alkali has eaten the pipe in some places where it had not been treated, necessitating renewal of some parts.

After this 3-inch line was laid with welded joints all through except where valves were placed about a mile apart with screw flanges, the Midwest Refining Co. laid a second naphtha line of 4-inch pipe, double length joints and this line was all welded, even the valves. The joints of the second line were 40 feet in length and no expansion joints were placed anywhere in the whole line. This line is now carrying the production of the big compressor plant in the field to Casper.

The pipelines now working between Salt Creek and Casper and the Sinclair line from that field to Kansas City are sufficient to take care of the field indefinitely. No more lines will be laid and the development work is expected to be finished in two more years as concerns the first and second Wall Creek sands. After about two more years, it is considered that the first and second Wall Creek pools will have all the wells drilled that are necessary to take out the oil in these two sands and as long as the supply is sufficient for the needs of the market, the lower sands will not be called on for production.

To Test Gases

The Urbain Gasoline Co. is placing an absorption test plant in the Salt Creek Field, near the Midwest Refining Co.'s gasoline plant, to make a test of the gases there. The test plant is ready to operate and this experiment is being made to see whether the new type of plant can extract more gasoline from the natural gas than the compressors do in the big plant. The Urbain plant uses a new kind of carbon made from peat. . In line with its policy of trying out any new system that has promise, the Midwest Refining Co. has permitted the Urbain Gasoline Co. to install the plant at the gas plant and operate on the waste gas and also on the regular flow, to see what the new system of extraction will do.

Runs From the Fields

Salt Creek	50,010
Teapot	1,250
Big Muddy	3,440
Grass Creek	2,750
Elk Basin	800
Greybull	20
Rock River	2,910
Notches	390
Rex Lane	110
Lance Creek	1,540
LaBarge	200
Poison Spider	1,120
Osage	350
Hamilton Dome	1,120
Lander	310
Byron	30
Pilot Butte	shut in
Lost Soldier	4,160
Ferris	90
Simpson Ridge	180
Cat Creek	2,830
Sunburst	25,000
Lake Basin	170
Florence	425
Moffat	3,943
Tow Creek	100
Fort Collins	3,060
Iles Dome	75
Rangeley	100
Boulder	25
Hogback	470
*Rattlesnake	5,830
Artesia	3,000
Total	115,818

*This field has been sending out some stored oil from tankage through the line.

NORTH TEXAS MARKET HAS SOFT UNDERTONE

WICHITA FALLS, Tex., June 21.—The strengthening in gasolines last week following the substantial buying by several large companies has subsided. The entire north Texas market again is slow and a soft undertone is felt with price trends downward.

Higher gravity gasolines have a slightly firmer tone than other products as the bulk of the purchases last week were in these grades. Additional scattered purchases are being made by exporters. However, even these products give no indication of strengthening further and several offers are being made by refiners Monday at concessions.

Although gasolines are not holding as expected, last week's purchases are given credit for checking a break in prices which was developing two weeks ago. The 64-66 375 product now is not offered much lower than 12¼ cents and the 60-62 400 at 11¾ cents.

The principal weakening is in the U. S. Motor (58-60 437) gasoline which is being quoted freely at 11¼ cents and in some cases at 11⅛ cents. This grade seemed to be the most inactive, although some encouragement was given with the purchase of 200 cars the previous week.

Other products also are off. Kerosene is more than plentiful at 7 cents with no demand. Natural gasolines are going begging and quotations are from three-quarters to a cent under a week ago. Grade C is quoted at 8¼ cents freely with B grades at 8¼ to 8½ cents and A grades at 8½ to 8¾ cents.

There is little demand for fuel oil with $1.25 prevailing. Gas oil is firm as this market has been cleaned up by substantial buying of previous weeks. Four cents is quoted for cracking stock. Distillates are practically unchanged.

LITTLE IMPROVEMENT IN SHREVEPORT MARKET

SHREVEPORT, La., June 19.—Refined market prices for lighter ends in the Shreveport territory were little changed during the week and the market improved very little. Practically all sales of U. S. Motor fuel were confined to spot sales. Navy moved slow throughout the week and inquiries were light.

Spot sales were fairly steady but a slump from that outlet is expected as a result of torrential rains throughout the territory the latter part of the week. Refiners, however, were able to hold prices steady.

Grade C natural gasoline's market was also slow and its movement reported sluggish. Kerosene prices are still sinking and at the end of the week the product was weak at 8¼ to 8½ cents.

Fuel oil prices remain firm. A 15,000-bbl. order for future delivery was reported to have been accepted by a leading refinery at $1.35. Fuel oil is being quoted on a wide margin, anywhere from $1.35 to $1.50, with a sprinkling of spot being reported at the high quotation. Distillates and gas oil continue to hold firm and move steadily.

In Arkansas, the past week was as gloomy as in Louisiana. Navy was sluggish as were naturals. Kerosene was soft and finding little demand. Heavier ends remained strong.

REFINING AND MARKETING

BARNSDALL SALESMEN ON INSPECTION TOUR

The Barnsdall Refineries, Inc., subsidiary of the Barnsdall corporation, was host in Tulsa Friday to its sales representatives in the northern and central states. The representatives were brought to Tulsa so they might study more of refinery operations and also to become better acquainted with the home office.

The program included a breakfast reception at the Mayo Hotel, a trip to the company's refinery at Barnsdall and other properties of the Barnsdall corporation, a luncheon at the T. N. Barnsdall club rooms at Barnsdall and a dinner at the Mayo Hotel in the evening.

The visiting sales representatives were met at the Frisco station by H. L. Hughes, sales manager at Tulsa; J. C. Evans, assistant sales manager, and J. T. Owen, manager of the lubricating department. George Locke, vice president and manager of sales, of Chicago was in charge of the day's program.

Following the inspection of the Barnsdall refinery and the luncheon at Barnsdall, F. E. Holsten, vice president, talked to the visitors on refining methods and explained in detail different processes through which the oil must pass before it is ready for the sales department to put on the market.

At the evening dinner, E. B. Reeser, president of the Barnsdall corporation, gave a talk on the company's operations, its branches and subsidiary companies, and its history. Fifty covers were laid at the dinner.

Sales representatives were accompanied to Tulsa by W. Wiley Rice, assistant sales manager of Chicago, and J. T. White, St. Paul, Minn.; Dan C. Miller and E. B. Burger, Chicago; George W. Zell, St. Louis; J. M. Giltner, Kansas City; J. R. Pringle, Des Moines, Iowa; C. A. Riley, Omaha, Neb.; J. T. Kerin, Wichita, Kans.; W. F. May, Memphis, Tenn., and Dan H. Roberts, Oklahoma City.

E. M. Coffey, general superintendent, and W. F. Dieterman, superintendent of the Barnsdall refinery; V. R. Oakley, superintendent of the Wichita refinery, and G. T. Grander, superintendent of the Okmulgee refinery, were present.

It is the plan of the Barnsdall officials to make the trip an annual event to be held each June 10, the anniversary of the late Theodore N. Barnsdall.

TEXAS PACIFIC REFINERY

FORT WORTH, Tex., June 21.—The new Texas Pacific Coal & Oil Co.'s refinery here now is getting crude from the shallow production in the North Strawn district as a result of the completion of a pipeline through Stevens County. The line, which is 50 miles long, was a part of the building program of the company in connection with the remodeling of the old Montrose refinery. Operation of the plant was started only this month.

STERLING REFINING CO. SUED

CHICAGO, June 19.—Rosenthal, Kurtz and Tiedibohe, attorneys, have brought suit for the Cosden Sales Corp., against the Sterling Refining Co., of this city for an alleged balance due of $37,000. The Sterling Refining Co. recently sold its physical assets to the Cities Service Co., and is retiring from business. The claim is in dispute.

GEORGE SOLLE INCORPORATES

CHICAGO, June 19.—George Solle, a well known Springfield, Ill., distributor, has incorporated his business as the George Solle Oil Co., for $25,000. The incorporators are George and Alice A. Solle and S. G. Hanson.

MANAGER OF SALES FOR PIERCE PETROLEUM

Announcement was made this week by Edward D. Levy, president, Pierce Petroleum Corp., of the appointment of George S. Norman as manager of sales, with headquarters in St. Louis.

Norman will be responsible for the sale of all commodities for the corporation in the United States. All division managers and other department heads in the sales organization will be under Norman's supervision.

George S. Norman

Norman has been connected with the Pierce Petroleum Corp. since July 1, 1924, when he joined the organization as manager of the lubricating oil sales department. He began his business career as a city salesman for the Dearborn Chemical Co., in charge of marine business. In 1913, he was appointed eastern sales manager of that company.

On January 1, 1920, Norman became manager of the lubricating oil department of the Tidewater Oil Sales Corp. In 1921, he became sales manager of that institution. Norman is a son of the late Charles R. Norman, who, for almost 50 years, was an executive of the Tidewater Oil Co. and one of the pioneer oil men of Pennsylvania.

Announcement was also made of the appointment of L. B. Lea as assistant manager of sales, with headquarters in St. Louis, who will have jurisdiction over all traffic matters. Lea was formerly manager of the traffic department of the Pierce Petroleum Corp.

FURNACE OIL PRICES ANNOUNCED BY INDIANA

CHICAGO, June 19.—Effective June 16, the following tankwagon delivered prices have been made by the Standard Oil Co. of Indiana, on its Stanolind furnace oil.

Deliveries of 1 to 149 gals.	.11
Deliveries of 150 to 399 gals.	.10
Deliveries of 400 to 849 gals.	.09½
Deliveries of 850 gas. or more	.09

These are not contract prices but the spot tankwagon markets. No contracts have been offered to its customers and it is the present idea the company will make contracts only to supply the customers' normal requirements the price to be the regular tankwagon price at date of delivery.

It will be noted that the prices are lower than some of the suggested quotations. The oil is substantially a 36-38 distillate. The majority of the consumers' tanks so far installed will hold 200 gallons, and the bulk of the deliveries will be at the 10-cent rate. On the basis of 10 cents per gallon return for furnace oil delivered, the independent distributor might buy at 4½ cents Group 3, and paying freight of 2.22 cents per gallon would have a gross profit to cover the costs of doing business and return on the investment of 3.28 cents per gallon.

RATIO OF LUBRICANTS TO GASOLINE SALES

One gallon of lubricating oil is sold for every 31.51 gallons of gasoline, according to figures compiled by the American Oil Men's Association based on reports of sales from representative jobbers in 14 cities in the central and northern states.

The following table, which shows the ratio of lubricating oil sales to gasoline, was printed in the last issue of the association's bulletin:

	Gaso.		Lub Oil
Quincy, Ill.	15.8 gal.	to	1 gal.
Minneapolis, Minn.	12.5 gal.	to	1 gal.
Lansing, Mich.	15.1 gal.	to	1 gal.
Wichita Falls, Texas	32 gal.	to	1 gal.
Wichita, Kans.	38 gal.	to	1 gal.
Wichita, Kansas ...	47 gal.	to	1 gal.
Saginaw, Mich.	3 gal.	to	1 gal.
Detroit, Mich.	45 gal.	to	1 gal.
Peoria, Illinois	50 gal.	to	1 gal.
Kalamazoo, Mich. ...	28.4 gal.	to	1 gal.
Kansas City, Mo. ..	57 gal.	to	1 gal.
Minneapolis, Minn. .	25 gal.	to	1 gal.
St. Jospeh, Mich. ..	25 gal.	to	1 gal.
Chicago, Illinois	50 gal.	to	1 gal.
Total	442.18 gal.	to	14 gal.
Average	31.51 gal.	to	1 gal.

CHICAGO OIL MEN'S OUTING

CHICAGO, June 19.—The regular luncheon of the Chicago Oil Men's Club was devoted to preparations for the annual outing. At the last meeting, on the invitation of John Carson, Cosden Oil Sales Corp., it was resolved to hold a golf tournament at the Crystal Lake Country Club on June 24. At the meeting today, it was agreed to make it a full day's outing to be held each year and to include a baseball game, swimming contests and other athletics. Many oil companies plan to take the bulk of their office force. The program will include a luncheon at noon and a dinner at night. A small charge will be made for nonmembers. George C. Peterson, of George C. Peterson & Co., is the chairman of the arrangement committee. The Chicago Oil Men's Club is prospering, having recently added a substantial number to its list. Its only regular activity is the holding of a weekly luncheon every Thursday at the Auditorium Hotel. At these meetings there are commonly 50 and upwards present and quite a number of visitors are entertained by the local oil men.

MARLAND ADDS SALESMEN

CHICAGO, June 19.—The Chicago office of the Marland Refining Co., has added to the sales force at this office, two well known oil men. Charles Hall, at one time manager of the Chicago office of the Transcontinental Oil Co., will represent Marland oils in western Michigan, and John Stopp, a former division manager for the Roxana Petroleum Corp., will represent Marland in southern Illinois.

SECURES LUB. ACCOUNT

CHICAGO, June 19. — The Advance Petroleum Co., of this city, announces it has contracted with the Texas-Mexican Oil & Refining Co., operating a 500-bbl. lubricating plant at Laredo, Tex., to sell the entire output of the refinery. The manager of the lubricating department is Harry P. Dunn.

OIL COMPANIES ASK SUSPENSION OF RATE

The Skelly Oil Co., Empire Refineries, Inc., Tidal Refining Co. and the Shaffer Oil & Refining Co., in a petition filed with the Interstate Commerce Commission during the past week, ask a suspension of the new schedule to Missouri and Illinois points from Groups 2 and 3, which will become effective July 1.

The new schedule provides for a ½-cent per 100 pounds increase in refined oils shipped from Oklahoma (Group 3) and Kansas (Group 2) to Missouri and Illinois points, which take the same rate as St. Louis. The carriers, in announcing this increase, stated that it was made in order to comply with the commission's ruling that there should be a 6-cent differential between the refined oil rates and the fuel oil rates. This differential at the present time is 5½ cents.

The companies filing the petition last week give several reasons why the rate should not be made effective pending a more thorough investigation. It is pointed out that granting the carriers the increase will disturb the existing harmony of rates now existing in the Western Trunk Line territory.

The refiners also deny the claim of the carriers that the new rate is in line with the order of the commission. The commission, it is said, did not establish a minimum fuel oil rate but rather established a rate on refined oils with the provision that the fuel oil rates should be 6 cents under. Due to this fact the refined oil rate and not the fuel oil rate should be the base price on which the 6-cent differential should be determined.

GREAT NORTHERN AIDS SUNBURST OIL MEN

CASPER, Wyo., June 19.—Since the congestion of crude in the Sunburst Field, Montana, the Great Northern Railroad has endeavored to help the oil men in every way possible to prevent a breakdown of the production in the field. This railroad appears to want to help the oil men so that both may benefit, and to further this end, the railroad has made several reductions in freight rates, has changed its coal burning locomotives from coal to fuel oil and has held conferences with the operators in an effort to try and find relief. The methods of the railroad have brought about a very congenial feeling between the oil operators and the Great Northern.

The Great Northern Railroad has filed a new rate with the Montana State Railroad Commission at Helena. This new rate applies between the Sunburst Field and Butte, and a reduction from 27 cents to 25 cents is made. This reduction was made for the benefit of the Blue Bird Oil & Refining Co. of Butte, which company has a small plant at Butte and produces gasoline, kerosene and fuel oils.

The railroad has also placed several oil-electric cars and trains on its lines, which use oil in the prime mover to develop electric power which operates the car or train. While the railroad has benefited in this endeavor towards helping the oil operators, the benefits derived through a better feeling between the oil interests and the road are probably much greater.

DOUBLE LOUISIANA TAX

BATON ROUGE, La., June 21.—A bill, providing for an increase in the state gasoline tax from 2 to 4 cents, has been introduced in the lower house of the Louisiana Legislature. The bill also asks that three-fourths of the revenue from the proposed new tax be credited to the general state highway fund and the remainder to the parishes for parish roads which are laterals to the general state highways.

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Many Oil Securities Make New Highs

Petroleum Issues Were Strong and Active During Past Week, With Union Oil of California Featuring Market

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York

NEW YORK, June 21.—Oil securities were active and strong during the past week with Union Oil of California featuring. The entire list, however, shared in the upturn. Many new highs were made for this year.

Wall Street almost began to believe a boom in oil stocks had arrived when this group became very active during a day's session of the past week. As usual, however, after a day of tremendous trading, they were left to drift once more.

The public often wonders what makes such large trading in stocks, wherein one issue will be turned over to the extent of over 200,000 shares in one day. Figures show that during a year the actual share turnover in some issues exceeds the outstanding capital stock many times. The answer is the turning over again and again of the very same certificates.

One day during the week Marland Oil was traded in to the extent of between 225,000 and 250,000 shares. Of course, this does not mean that this much stock was purchased and laid away in vaults. It is very doubtful if a quarter of this could have been bought through the Stock Exchange in one day, as there probably was not that much available. The same stock must have been bought and sold many times during the day, although probably 25,000 to 50,000 shares might actually have been taken out of the market.

When trading in securities becomes so heavy, and stocks rise, the public always asks "Who is doing the buying?" Often it answers the question itself by putting in a purchasing order for its own account. It might be better to ask, on a rising market, "Who is selling?"

Another instance of great activity is to be found in the common stock of the Panhandle Producing & Refining Co. The turnover for this stock during 1925 amounted to approximately 75,000 shares. The outstanding stock amounts to approximately 200,000 shares. So far this year, however, the turnover has exceeded the capital stock several times. The last two days it has exceeded 25,000 shares each day, or 25 per cent of the capital stock in the two sessions. Obviously this represents considerable reselling and repurchasing, as well as actual "strongbox" buying.

The turnover in Panhandle stock of which there are about 200,000 shares outstanding, is at a higher rate than that of Standard of New Jersey common, of which there are 20,000,000 shares outstanding.

Southern Pipe Line

The new stock of the Southern Pipe Line Co. is quoted exdividend at 28 bid and 30 asked, against a sale at 70 for the old stock. The dividend amounted to $40 a share. New certificates of $50 par value will soon be delivered in exchange for those of $100 par. The dividend was paid out of capital assets.

Humble Oil & Refining Co.

The growth of Humble Oil & Refining Co. since 1917 has provided one of the spectacular features of the oil industry, and this concern enjoys a position not generally appreciated.

The company enjoyed its original success as a producing company. Since the Standard Oil Co. of New Jersey began to take a financial interest in the concern, its success as a producer pyramided, yet this success was due as much to efficient management as to financial support. Humble became one of the largest producers of crude oil in Texas, and the goal of the interests back of it is to make it the largest. In this it will have plenty of competition, in view of the strides made by The Texas Company, Gulf Production, Magnolia and other companies.

The real feature of Humble's growth, however, is that of its refining and marketing divisions. Standard Oil interests apparently had planned to make Humble an all-around oil unit and not simply a producer. Humble now has a modern refinery at Baytown, on the Houston ship channel, which forms really the backbone of the company's operations. Crude produced in the Mid-Continent and Gulf Coast Fields is in part refined here and shipped to coastwise or foreign ports in large quantity. In March, 1926, Humble's shipments were second among Texas companies only to Gulf Oil.

Humble's position as a refiner is illustrative of the growing importance of Texas as a manufacturing and exporting center. In exports of all products Texas now ranks second only to New York State. It leads in petroleum.

Although a big crude oil producer, it is probable Humble's profits will be derived more in the future from the sale of refined products than from crude production. This will add permanence and strength to the company's position in the oil industry.

Texas Pacific Coal & Oil

The Texas Pacific Coal & Oil Co. has completed a 50-mile pipeline through Stephens County to connect with shallow production in the north Strawn district, and will gather crude for its new refinery at Fort Worth, which is now operating. The refinery is equipped with modern facilities to manufacture refined oil products economically. The company has spent about $1,000,000 for the new line and refinery.

Shell Union Oil

A memorandum of agreement has been filed at Bakersfield, Calif., by the Shell Co. of California, subsidiary of Shell Union Oil Corp., covering all lands of Miller & Lux in 42 townships in Kern, Tulare and Kings Counties, California. Terms were not disclosed, but a cash bonus involved is reported more than $1,000,000.

General Petroleum

The General Petroleum Corp. has submitted a circular letter and conversion form to stockholders relative to the exchange of two shares of Standard Oil Co. of New York stock for every one of General Petroleum held. Surrender can be made to the Guaranty Trust Co. of New York or the Bank of California, of San Francisco, the appointed depositaries. Conversion to other than registered holders requires, for the Guaranty Trust Co., endorsement and witness of a Stock Exchange member house, or bank or trust company having a New York correspondent; for the Bank of California, witness and endorsement of a San Francisco Stock and Bond Exchange member house or national bank.

The letter states that stockholders of the General Petroleum Corp. will receive no dividend from the Standard Oil Co. of New York until their stock has been converted.

Washington Oil

The Washington Oil Co .has declared a dividend of $1 on the new $25 par value stock, payable June 21 to stockholders of record June 16.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS—

Stocks—	Par	Clos. Quot. June 21	Clos. Quot. June 14	1926 High	1926 Low	1925 High	1925 Low	1924 High	1924 Low
Amerada Cor.	..	28⅝	28	29¼	21¾	..	..	..	..
Atlantic Ref., com.	100	118½	118¾	128⅜	97	117½	95½	140½	78½
Barnsdall "A"	25	27	26¼	33⅛	23⅛	33⅛	18¾	29½	14
California Pet., com.	25	34½	32½	38⅛	30⅝	34⅝	23⅞	29	19⅞
General Petroleum	25	63⅞	64¼	65⅝	51¼	59	42	45	38⅝
Houston Oil	100	64	62½	72	50¼	85	59	82½	61
Independent Oil & Gas		25⅜	24⅝	34	20¼	41¾	13½	16¼	5¾
Indian Refining	10	10	10⅜	13⅜	9½	14¼	5½	7	3⅜
Lago Oil & Trans.	..	23⅜	23⅝	24½	19¼	..	..	..	..
Louisiana Oil	10	19½	16½	19⅝	12	23¾	13¾	..	..
Maracaibo	..	26⅞	24½	28⅞	20¾	35½	20⅜	37¼	25⅜
Marland	..	61⅞	59½	63⅜	49¼	60¼	32⅝	42	29
Mexican Seaboard	..	8	8¼	12⅛	6	22½	9	25¾	14⅛
Mid-Continent Pet.	..	32	32½	41	25⅝	38	25¾	40¼	22⅝
National Supply	50	60¾	60	65⅞	55½	71	54⅜	72⅛	54
Oil Well Supply	25	*31	*31	36	30½	38	33⅜	..	..
Pan. Amer. P. & T., com.	50	74½	73⅞	76⅛	56¼	83⅞	59½	65	44½
Pan. Amer., Western B.	..	39⅞	39	46	34	49⅜	37¼	..	..
Phillips Pet.	..	48¼	46¼	48¼	42½	47⅛	36¼	42¼	28½
Producers & Refiners	50	14	*13	17½	11	32⅝	12½	43½	29⅜
Pure Oil, com.	..	28⅛	27⅞	31	26	33¾	25⅛	30¼	20
Royal Dutch, N. Y., sh.	13.40	53	53	57⅜	50	57⅝	48¼	59½	40⅜
Shell Transport	10	*48	*45	48⅞	42	49	39¾	42	33
Shell Union, com.	..	25⅝	25½	28½	24	28⅜	21⅝	22½	15⅜
Simms Pet.	10	30	19⅞	28⅝	20⅜	28½	17⅜	24	10⅜
Sinclair Consolidated, com.	..	23	23	24⅞	19⅝	24⅞	17	17½	15
Skelly Oil	25	24⅝	34	36⅛	27	32½	21⅜	29	17⅛
Standard of California	25	58⅜	58⅝	62¼	54	67¼	51½	68½	55½
Standard of New Jersey, com.	25	44⅜	44⅝	46⅜	40¼	47½	38⅜	41½	33
Sun Oil Co.	..	33½	*34	41⅝	31½	43⅞	38⅛	..	..
The Texas Company	25	55¼	54½	55¼	49	55	42⅞	..	..
Texas Pacific Coal & Oil	10	14⅞	14⅜	19½	12⅛	23⅝	11	15½	8¼
Transcontinental	..	4⅛	3½	4⅜	3	5⅞	3½	6¼	3⅜
Union Oil of California	25	53	44¼	56	37½	43⅜	33⅛	39	35½
Union Tank, com.	100	*94	*93	94⅞	84½	‡134	118	132⅞	94
White Eagle Oil & Refining	..	27¾	27⅜	29¾	26¼	31¾	25⅝	29⅜	23⅛
Standard Oils									
Anglo-American Oil	£1	18	18½	19¾	16½	26¾	17½	18⅜	14⅝
Borne Scrymser	100	*230	*225	248	226	240	205	164	150
Buckeye Pipe Line	50	*51	*51	59½	52	72	63½	85½	51
Chesebrough Mfg. Co.	25	*71	70	72⅝	63	74	48¼	52½	29¼
Continental	10	21⅛	20⅞	25⅞	19½	31⅛	21⅞	..	..
Crescent Pipe Line	25	*13⅞	13⅜	16	14½	17½	10	20	11⅜
Cumberland Pipe Line	100	*108¼	*108¼	137	108	156	128	148	108
Eureka Pipe Line	100	*51½	*50½	63¾	47⅜	96	61¼	105	74
Galena Signal, com.	100	*20	20	32½	17¼	68½	23½	69¾	62½
Humble Oil & Refining Co.	25	64⅛	65¼	68⅛	52	99	42⅜	43⅜	36
Illinois Pipe Line	100	132	*134	144	131	154½	124	161	123
Imperial Oil, Ltd.	..	35⅜	36¼	38⅜	32½	39¼	27¼	119	99
Indiana Pipe Line	50	*66	66½	67	58	84	57⅛	100	66
International Pet. Co.	10	33⅝	34⅛	35¼	28¾	35⅝	22⅛	24⅜	16⅞
National Transit Co.	12.50	15½	14⅜	20⅜	15⅜	25½	16½	25⅞	20⅝
New York Transit	100	*48	*49	50	39	79	50	97	54½
Northern Pipe Line	100	*73½	*71	80½	70⅝	88	67½	107½	72
Ohio Oil Co.	25	58	58	67¾	58	75¼	60	79½	53
Penn.-Mex. Fuel	25	20⅛	*18	23	15	44	19	35⅝	27
Prairie Oil & Gas	25	54	54½	60¼	48	65½	45⅞	269	193
Prairie Pipe Line	100	126	125½	127	122½	129¾	105	111	100
Solar Refining Co.	100	*190	*185	212	184½	259	200	240	170
South Penn Oil	25	35	*38	50	35	‡197	139	176	117
Southwest Pa. Pipe Line	100	*48	*57½	54½	47½	84	50	89	68
Southern Pipe Line	50	*28	*70	74½	61½	103	63	100	80½
Standard of Indiana	25	64⅝	64½	70½	61⅝	70⅜	59½	69⅝	54¼
Standard of Kansas	25	26⅞	26⅜	36½	25	46	30¼	50½	32½
Standard of Kentucky	25	*121	120½	134⅜	108	137	114⅜	121⅜	101
Standard of Nebraska	100	48½	49	†51⅛	†42	270	231	262	196
Standard of New York	25	32	32⅜	47¼	31⅝	48⅝	40	48	37¾
Standard of Ohio, com.	100	304½	308	362	292½	369	338	337½	277
Swan & Finch, com.	25	*16	*16	21	18	27	12	28	20
Vacuum Oil	25	102½	101½	109⅝	94⅛	109⅛	80½	83½	50½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	86¼	86	93⅜	82½	98¼	63½	67⅝	56
Tide Water Associated		24⅞	24⅝	27	21	..	..	..	..

*Bid, no sales. ‡Old stocks. †New stocks.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

June 21	59.91	May 17	57.63	Apr. 12	56.07
June 14	59.40	May 10	57.08	Apr. 5	56.78
June 7	58.92	May 3	57.23	Mar. 29	56.18
May 28	59.31	Apr. 26	57.39	Mar. 22	56.96
May 24	58.84	Apr. 19	55.63	Mar. 15	56.34

PENNSYLVANIA MARKET TENDENCY DOWNWARD

OIL CITY, Pa., June 19.—Most of the products on the Pennsylvania refined list have shown a downward tendency during the past week. Gasoline is quiet, with the demand less than had previously prevailed and the prices shaded some. The jobbers are loaded up with motor fuel, which was bought in May, and they are holding off their buying looking for lower prices.

In the case of kerosene the jobbers loaded up on the way up and as a result there is a slackening of the demand and the product seems to be more plentiful now. The demand for neutrals has been firm during the week but not so great as it was in the previous weeks and prices are a very slight amount lower. Cylinder stocks continue to be quiet with no demand. The demand for fuel oil has fallen off. Wax seems to be in a fairly good position.

MAJOR LAUGHLIN DIES

Major Alexander Laughlin, Jr., aged 37, president of the Central Tube Co. of Pittsburgh, Pa., died June 12, in a Pittsburgh hospital, while under anaesthetic for a dental operation. Major Laughlin won his military title during the World War while serving with the Eighty-fourth Division. In addition to his duties as head of the Central Tube Co., he was associated with the engineering firm of Alex Laughlin & Co., and was a director of the Vernon Tool Works and the Monongahela National Bank of Pittsburgh. He became president of the Central Tube Co. in 1919, succeeding his father, Alexander Laughlin, Sr. Major Laughlin was one of the youngest chief executives in the steel industry. He is survived by his wife, formerly Margaret Mellon, daughter of W. L. Mellon, an infant son, Alexander Mellon Laughlin, and his parents, Mr. and Mrs. Alexander Laughlin, Sr.

Can an Appraisal Be "Too Good?"

Occasionally a property owner raises the question of whether an appraisal can be "too good." The question arises because provable appraisal service costs more than that in which there is an element of opinion or guesswork.

The American Appraisal Company operates on the principle that an appraisal cannot be "too good"—that the making of an appraisal entails a moral responsibility which cannot be overestimated.

The record of The American Appraisal Company for the past thirty years offers abundant testimony of the soundness of this principle. For whatever purpose, insurance, cost accounting, finance, purchase or sale, and many others, an appraisal cannot be too good.

The American Appraisal Co.

MILWAUKEE

DALLAS—Mercantile Bank Bldg.

PUBLIC UTILITIES - INDUSTRIALS - REAL ESTATE PROPERTIES - NATURAL RESOURCES

A NATIONAL ORGANIZATION

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	June 22		June 15		June 8	
OKLAHOMA (Group 3)—						
50-52 450 end point	.11		.11¼		.11¼	
56-58 450 end point	.11	.11⅛	.11¼	.11½	.11¼	.11⅜
58-60 450 end point	.11⅛	.11¼	.11½		.11⅜	.11½
58-60 437 end point (U. S. Motor)	.11¼	.11⅜	.11½	.11¾	.11½	.11¾
60-62 400 end point	.11¾	.12	.12		.11⅞	.12
64-66 375 end point	.12⅛	.12¼	.12¼	.12½	.12¼	.12½
68-70 360 end point	.12⅝	.12¾	.12¾	.13	.12¾	.13
KANSAS—						
58-60 437 end point (U. S. Motor)	.11½	.12	.12	.12⅛	.12	
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.10¾	.11	.11	.11⅛	.11	.11⅛
50-52 450 end point (Naphtha)	.10⅞	.11⅛	.11	.11¼	.11	.11⅛
56-58 450 end point	.11	.11⅛	.11¼	.11⅜	.11⅛	.11⅜
58-60 437 end point (U. S. Motor)	.11⅛	.11⅜	.11½	.11¾	.11½	.11⅝
60-62 400 end point	.11¾	.12	.12	.12⅛	.11¾	.12
64-66 390 end point	.12	.12⅛	.12¼		.12	.12¼
64-66 375 end point	.12¼	.12⅜	.12⅜	.12½	.12¼	
68-70 360 end point	.12½	.12¾	.12¾		.12⅝	.12⅞
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.12	.12¼	.12	.12¼	.12¼	.12½
64-66 375 end point	.13	.13¼	.13	.13¼	.13	.13¼
ARKANSAS—						
58-60 450 end point	.12	.12¼	.12	.12¼	.12¼	.12½
58 60 437 end point (U. S. Motor)	.12¼	.12½	.12¼	.12½	.12½	.12⅝
64-66 375 end point	.13	.13⅛	.13	.13¼	.13	.13¼
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.14¼	.14½	.14½	.14¾	.14½	.14¾
PENNSYLVANIA—						
52 Naphtha	.13¼	.13½	.13½	.13¾	.13½	.13¾
54 Naphtha	.13½	.13¾	.13¾	.14	.13¾	.14
56 Naphtha	.13¾	.14	.14	.14¼	.14	.14¼
58 Naphtha	.14	.14¼	.14½	.14¾	.14½	.14¾
60 Gasoline	.14¼	.14½	.14¾	.15	.14¾	.15
62 Gasoline	.14½	.14¾	.15	.15¼	.15	.15¼
64 Gasoline	.14¾	.15	.15¼	.15½	.15¼	.15½
66 Gasoline	.15⅜	.16	.16	.16¼	.16	.16¼
68-70 Gasoline	.18¼	.18½	.18¾	.19	.18¾	.19
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.12½	.13	.12½	.13	.12½	.13
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.11	.11⅛	.11¼		.11¼	.11½
56-58 450 end point	.11	.11¼	.11¼	.11⅜	.11½	.11⅝
58-60 437 end point (U. S. Motor)	.11¼	.11½	.11¾		.11¾	
60-62 400 end point	.11⅞	.12	.12	.12⅛	.12	.12⅛
64-66 375 end point	.12¼	.12⅜	.12¼	.12½	.12½	
68-70 360 end point	.12¾		.12¾	.13	.13	.13⅛

*Colorado points.

NATURAL GASOLINE

	June 22		June 15		June 8	
OKLAHOMA (Group 3)—						
Grade AA, 80 87.9, 375 e.p., rec. 90%	.08½	.08¾	.09¼		.09¾	.09⅞
Grade A, 72-79.9, 375 e.p., rec. 90%	.08½	.08¾	.09¼		.09¾	.10
Grade BB, 84-92, 375 e.p., rec. 85%	.08¼	.08½	.09	.09⅛	.09½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.08¼	.08½	.09	.09⅛	.09½	
Grade C, 80-90, 375 e.p., rec. 78%	.08	.08¼	.09		.09¼	.09½
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.08½	.08¾	.09¼		.09¾	.09⅞
Grade A, 72-79.9, 375 e.p., rec. 90%	.08½	.08¾	.09¼		.09¾	.09⅞
Grade BB, 84-92, 375 e.p., rec. 85%	.08¼	.08½	.09		.09½	.09⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.08¼	.08½	.09	.09⅛	.09½	.09⅝
Grade C, 80-90, 375 e.p., rec. 78%	.08	.08¼	.08⅞	.09	.09½	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.10	.10¼	.10¼		.10¾	.11
Grade B, 76 83.9, 375 e.p., rec. 85%	.09¾	.10	.10	.10¼	.10¼	.10½
Grade C, 80-90, 375 e.p., rec. 78%	.09½	.09¾	.10		.10⅜	.10½
CALIFORNIA—						
78-85 absorption, 360-390 end point	.16	.16½	.16	.16½	.15½	.16
78-84 compression, 350 end point	.16	.16½	.16	.16½	.15½	.16
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09	.09⅛	.09¼	.09⅜	.09⅞	.10
Grade A, 72-79.9, 375 e.p., rec. 90%	.09	.09⅛	.09¼	.09⅜	.09⅞	.10
Grade BB, 84-92, 375 e.p., rec. 85%	.08⅞	.09	.09	.09¼	.09½	.09¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.08⅞	.09	.09	.09¼	.09½	.09¾
Grade C, 80-90, 375 e.p., rec. 78%	.08¾		.09		.09½	

MOTOR NATURAL GASOLINE (BLENDS)

	June 22		June 15		June 8	
OKLAHOMA (Group 3)—						
60-62 450 end point	.10¾	.11	.11⅛	.11½	.11¼	.11½
64-66 437 end point	.11	.11¼	.11½		.11¼	.11½
NORTH TEXAS—						
64-66 437 end point	.11	.11⅛	.11¼	.11⅜	.11¼	
PENNSYLVANIA—						
*60-62	.13½	.13¾	.13¾	.14	.13¾	.14
*64-66	.13¾	.14	.14	.14¼	.14	.14¼
*66-68	.13¾	.14	.14	.14¼	.14	.14¼
*68-70	.14	.14¼	.14¼	.14½	.14¼	.14½
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.11		.11¼		.11¼	.11⅝
64-66 437 end point	.11	.11¼	.11½	.11¾	.11½	.11¾

*At Sistersville, W. Va.

BURNING OIL

	June 22		June 15		June 8	
KANSAS—						
41-43 water white Kerosene	.07¾	.08	.08½	.08¾	.09½	
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.06¾	.07	.08		.09	.09⅛
42-44 water white Kerosene	.07¼		.08½	.09	.09¼	.09½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.07¾	.08	.09⅛	.09⅜	.09½	.09¾
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.09¾	.10	.11	.11⅛	.12	.12⅛
NORTH TEXAS—						
41-43 water white Kerosene	.06½	.06¾	.08⅛	.08¼	.08⅞	.09
ARKANSAS—						
41-43 water white Kerosene	.08	.08¼	.08¾	.09	.09½	
PENNSYLVANIA—						
43 Kerosene prime white	.10½	.10¾	.11	.11¼	.11¾	.12
45 Kerosene water white	.10¾	.11	.11¼	.11½	.12	.12¼
46 Kerosene water white	.11½	.11¾	.12	.12¼	.12½	.12¾
47 Kerosene water white	.12½	.12¾	.12¾	.13	.13	.13¼
34 Neutral	.07¼	.07½	.08	.08¼	.08	.08¼
34 Sundebloom Neutral	.08½	.08¾	.09	.09¼	.09	.09¼
36 Mniers' Neutral	.06¾	.07	.07¼	.07½	.07¼	.07½
300 Mineral Seal	.08¼	.08½	.08½		.08½	
CALIFORNIA—						
38-40 water white (high burning test)	.07½	.08½	.07½	.08½	.07½	.08½
Engine distillate, 43-45 445 end point	.10¼	.10½	.10¼	.10½	.10¼	.10½
Engine distillate, 42-44 450 end point	.10	.10¼	.10	.10¼	.10	.10¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.06¾	.07	.08	.08½	.09	.09¼
42-44 water white Kerosene	.07¼	.07⅜	.08¾	.09	.09¼	.09½

*Colorado points.

FUEL OILS

	June 22		June 15		June 8	
KANSAS—						
24-26 Fuel Oil	1.35	1.40	1.25	1.30	1.32½	1.35
32-36 Gas Oil	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅜
38 40 Distillate	.04½	.04⅝	.04½	.04⅝	.04½	.04⅝
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.17½	1.20	1.20		1.22½	1.25
22-26 Fuel Oil (sellers' cars)	1.20		1.20	1.25	1.25	
24-26 Fuel Oil (sellers' cars)	1.20	1.22½	1.25		1.27½	1 32½
26-30 Fuel Oil (sellers' cars)	1.25	1.30	1.27½	1.30	1.32½	1.35
28-30 Fuel Oil (sellers' cars)	1.30	1.35	1.32½	1.35	1.40	
32-36 Gas Oil (cracking stock)	.04		.04	.04¼	.04	.04⅛
36-38 Distillate	.04⅛	.04⅜	.04¼	.04⅜	.04¼	.04⅜
38-40 Straw Distillate	.04⅜	.04⅝	.04⅜	.04½	.04½	
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.25		1.25	1.30	1.30	
32-36 Gas Oil (straw)	.04	.04⅛	.04	.04¼	.03⅞	.04
38-40 Straw Distillate	.04¼		.04¼		.04	.04¼
NORTH LOUISIANA—						
18-20 Fuel Oil	1.35	1.40	1.30	1.35	1.35	1.40
32 36 Gas Oil	.04¼	.04½	.04¼	.04⅜	.04¼	.04½
36-38 Distillate	.04½	.04¾	.04½	.04⅝	.04½	.04¾
ARKANSAS—						
38-40 Distillate	.04½	.04¾	.04⅝	.04¾	.04⅝	.04¾
32-36 Gas Oil	.04¼	.04½	.04¼	.04½	.04¼	.04½
16-20 Refinery Fuel Oil	1.20	1.25	1.20	1.25	1.20	1.25
GULF COAST (South Texas)—						
Gas Oil	.05½	.05¾	.05½	.05¾	.05½	.05¾
Fuel Oil	1.75	1.85	1.75	1.85	1.75	1.85
PENNSYLVANIA—						
30-34 Fuel Oil	.05¾	.06	.06	.06¼	.06¼	.06½
36-40 Fuel Oil	.06½	.06⅝	.06½	.06¾	.07	.07¼
CALIFORNIA—						
33-35 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-35 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tide water)	1.00	1.04	1.00	1.04	1.00	1.04
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.25	1.30	1.27½	1.32½	1.30	1.35
22-26 Fuel Oil (sellers' cars)	1.20	1.25	1.25	1.27½	1.25	1.30
18 22 (El Dorado)	1.17½	1.20	1.20	1.25	1.20	1.25
18-20 (Smackover)	1.20		1.20	1.22½	1.20	
32-36 Gas Oil	.04	.04½	.04	.04¼	.04	.04⅛
36-38 Distillate	.04¼	.04⅜	.04¼		.04¼	.04⅜
38-40 Straw Distillate	.04½	.04⅝	.04½	.04¾	.04½	.04¾

LUBRICATING OILS AND WAX

	June 22		June 15		June 8	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.07	.06	.07	.06	.07
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
100 vis., 2 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 4 color, 20-25 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
180 vis., 3 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 4 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 3 color, 23-28 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
220 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
220 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
180 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
220 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 5 color, 25-30 cold test	.13	.14	.13	.14	.13	.14
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
Cylinder Stocks:						
180-200 vis., S. R. green, 40-45 cold test	.08½	.11	.08½	.11	.08½	.11
190-200 vis., S. R. green, 40-45 cold test	.08	.08½	.08	.08½	.08	.08½
170-190 dark green, 40-45 cold test	.06	.06½	.06	.06½	.06	.06½
190-200 vis. @ 210 "D" Bright Stock	.33	.35	.33	.35	.33	.35
200-210 vis. @ 210 "E" Bright Stock	.30	.31	.30	.31	.30	.31
150 vis. @ 210 "E" Bright Stock	.27	.28	.27	.28	.27	.28
150 vis. @ 210 "D" Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
122-124 White Crude Scale Wax	.04¾	.04⅞	.04¾	.04⅞	.04¾	
PENNSYLVANIA—						
150, 3 color	.24½		.25½		.25½	
180, 3 color	.28		.28½		.28½	
200, 3 color	.29½		.30½		.30½	
220, 3 color	.32		.32		.30	
600, steam refined	.14½		.15¾		.15¾	
635, steam refined	.18		.20		.20	
650, steam refined	.20		.21		.21	

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

600, Pennsylvania flash	.26		.26½		.26½	
630, Pennsylvania, flash	.32½		.34		.34	
*550, E filtered	.19		.19¼		.19½	
600, E filtered	.19¾		.20		.20¼	
*600, E filtered	.21		.21		.21¼	
600, D filtered	.26½		.26¾		.26¾	
550, E filtered	.18		.18½	.18¾	.18½	.18¾
550, D filtered	.22		.22¼	.22½	.22¼	.22½
Pennsylvania Bright Stock	.41		.41		.40	
122-124 White Crude Scale Wax	.05⅛	.05¼	.05⅛	.05¼	.05⅛	.05¼
†124-126 White Crude Scale Wax	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.07½	.08	.07½	.08	.08	.08½
No. 3 color, 200 vis., pale oil	.11½	.12	.11½	.12	.12	.12½
No. 3½ color, 300 vis., pale oil	.12½	.13½	.12½	.13½	.13½	.14
No. 3¾ color, 500 vis., pale oil	.14½	.15½	.14½	.15½	.15½	.16
No. 4 color, 750 vis., pale oil	.18½	.19½	.18½	.19½	.19½	.20½
No. 2 plus color, 200 vis., pale filtered	.21½		.21½		.22	
No. 2 color, 300 vis., pale filtered	.24½		.24½		.25	
No. 2½ color, 500 vis., pale filtered	.27½		.27½		.28	
No. 2½ color, 750 vis., pale filtered	.35½		.35½		.36	
No. 5 to 6 color, 200 vis., red oil	.09½	.10	.09½	.10	.10	.10½
No. 5 to 6 color, 300 vis., red oil	.11½	.13	.11½	.13	.12	.12½
No. 5 to 6 color, 500 vis., red oil	.12½	.13½	.12½	.13½	.13½	.14
No. 5 to 6 color, 750 vis., red oil	.16¼	.17½	.16¼	.17½	.17½	.18½
CALIFORNIA—						
130 pale, 2½-3 color	.10	.11½	.10	.11½	.10	.11½
200 vis., 2½-3 color	.13½	.14½	.13½	.14½	.13½	.14½
300 vis., 3 -3½ color	.15	.16	.15	.16	.15	.16
350 vis., 3½-4 color	.16½	.17½	.16½	.17½	.16½	.17½
400 vis., 3½-4 color	.18	.19	.18	.19	.18	.19
Red Neutrals:						
200 vis., 4½-5 color	.12	.13	.12	.13	.12	.13
300 vis., 5 -6 color	.13	.14	.13	.14	.13	.14
400 vis., 5 -6 color	.15	.16	.15	.16	.15	.16
500 vis., 4½-5 color	.18	.19	.18	.19	.18	.19
500 vis., 6 -6½ color	.16	.17	.16	.17	.16	.17
600 vis., 6½ plus color	.17	.18	.17	.18	.17	.18

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

Gasoline:	June 22	June 15	June 8
U. S. Motor, 58-60 437	.15	.15	.15
Export, 64-66 375	.17	.17	.17
Kerosene, prime white	.09⅛	.09⅛	.09⅛
*Bunker Oil, 14-16, per bbl.	1.75	1.75	1.75
*Diesel Oil, 28-30, per bbl.	2.50	2 50	2.50
Gas Oil, 28 plus	.06¾	.06¾	.06½
Cylinder Oil, light filtered, 600 s.r.	.29	.29	.29
Bright Stock, No. 5, 150 vis. at 212 F.	.41	.41	.41
White Neutral, No. 1, 170 vis., 1 color	.37	.37	.37
Pale Oil, "25," 170 vis., 3½ color	.13	.13	.13
Pale Oil, "28," 100 vis., 2 color	.08	.08	.08
Red Oil:			
No. 3, 160 vis., 7 color	.11	.11	.11
No. 2, 212 vis., 5½ color	.12	.12	.12
No. 1, 265 vis., 5½ color	.13½	.13½	.13½
Polar, 295 vis., 6 color	.14	.14	.14
Paraffin Wax, refined:			
120-122 a.m.p., per lb.	.06	.06	.06
125-127 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.07	.07	.07
Petrolatum, in bbls., per lb.:			
Amber	.03⅛	.03⅛	.03⅛
Light amber	.03½	.03½	.03½
Cream	.05½	.05½	.05½
Lily white	.07¾	.07¾	.07¾
Snow white	.08¾	.08¾	.08¾

*Lighterage 6.5c a barrel extra.

NEW YORK CASE EXPORT PRICES

	June 22	June 15	June 8
Gasoline, U. S. Motor, 58-60	.29.40	.29.40	.29.40
Kerosene:			
Standard white	.19.40	.19.40	.19.40
Water white	.20.40	.20.40	.20.40

LOS ANGELES EXPORT PRICES

	June 22		June 15		June 8	
Kerosene water white	.05½	.06½	.05½	.06½	.05½	.06½
U. S. Motor Gasoline, 54-56 437 e.p.	.10¾	.11	.11	.11¼	.11	.11¼

CRUDE OIL PRICES

OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**
(Oklahoma, Kansas and North and East Central Texas)

28° to 28.9°	$1.65
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° to 37.9°	2.37
38° to 38.9°	2.45
39° to 39.9°	2.53
40° to 40.9°	2.61
41° to 41.9°	2.69
42° to 42.9°	2.77
43° to 43.9°	2.85
44° to 44.9°	2.93
45° to 45.9°	3.01
46° to 46.9°	3.09
47° to 47.9°	3.17
48° to 48.9°	3.25
49° to 49.9°	3.33
50° to 50.9°	3.41
51° to 51.9°	3.49
52° and above	3.57

*Other major purchasers except as noted below.

Champlin Refining Co.
(Garber and Tonkawa)
Schedule based on Prairie Oil & Gas Co. paying 10 cents additional for each grade of crude above 38° gravity.

Humble Oil & Refining Co.
(North and East Central Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Big Lake, Nacona and Lytton Springs)
Same prices as Prairie Oil & Gas Co. schedule. Postings below 28 gravity, 8 cents less for each degree.

Magnolia Petroleum Co.
(Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas)

Below 28°	$1.30
Other grades same as Prairie Oil & Gas Co.	
Iatan	$1.15
Corsicana heavy	1.25
Panola County:	
30° to 34.9°	$1.95
35° to 37.9°	2.10
38° and above	2.25

Texhoma Oil & Refining Co.
(Wichita Falls, Tex., District)

Below 32°	1.94
32° to 32.9°	2.02
33° to 33.9°	2.10
34° to 34.9°	2.18
35° to 35.9°	2.26
36° to 36.9°	2.34
37° to 37.9°	2.42
38 to 38.9°	2.50
39° to 39.9°	2.60
40° to 40.9°	2.66
41° to 41.9°	2.74
42° to 42.9°	2.82
43° to 43.9°	2.90
44° and above	2.98

TEXAS PANHANDLE

Kay County Gas Co.
Magnolia Petroleum Co.

28° to 28.9°	$1.35
29° to 29.9°	1.40
30° to 30.9°	1.45
31° to 31.9°	1.50
32° to 32°9	1.55
33° to 33.9°	1.60
34° to 34.9°	1.65
35° to 35.9°	1.70
36° to 36.9°	1.75
37° to 37.9°	1.80
38° to 38.9°	1.85
39° and above	1.90

Humble Oil & Ref. Co.

39° to 39.9°	1.90
40° to 40.9°	1.95
41° to 41.9°	2.00
42° to 42.9°	2.05
43° to 43.9°	2.10
44° and above	2.15

Grades below 39 gravity same as posted by Magnolia Petroleum Co. and Kay County Gas Co.

GULF COAST

***Humble Oil & Refining Co.**

Grade A	$1.60
Grade B—	
Below 25°	1.50
25° to 25.9°	1.55
26° to 26.9°	1.60
27° to 27.9°	1.65
28° to 28.9°	1.70
29° to 29.9°	1.75
30° to 30.9°	1.80
31° to 31.9°	1.85
32° to 32.9°	1.90
33° to 33.9°	1.95
34° to 34.9°	2.00
35° and above	2.05
Boling	1.50
High Island (The Sun Co.)	1.40

The Texas Company

Grade A	$1.60
Grade B	1.50
†Light crude—	
35° to 35.9°	2.05
36° to 36.9°	2.10
37° to 37.9°	2.15
38° to 38.9°	2.20
39° to 39.9°	2.25
40° and above	2.30

†The Texas Company's postings on light crude under 35° gravity are same as Humble Oil & Refining Co.'s grades and prices for Grade B crude.

*The Sun Pipe Line Co.'s postings same as Humble's.

SOUTH CENTRAL AND SOUTHWEST TEXAS

***Magnolia Petroleum Co.**

Luling (contract)	$1.30
Mirando (Webb, Jim Hogg and Zapata Counties)	1.25
Rockdale-Minerva (Milam County)	1.25
Thrall	1.00
Callihan (Live Oak and McMullen Counties)	1.75
‡Lockhart (Lytton Springs)	
Somerset (Grayburg Pipe Line Co.):	
28° to 28.9°	1.25
29° to 29.9°	1.35
30° to 30.9°	1.71
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2 05
34° to 34.9°	2.13
35° to 35.9°	2.20
36° to 36.9°	2.29
37° to 37.9°	2.37
38° and above	2.45

*Texpata Pipe Line Co. and Humble Pipe Line Co. also posts in Mirando Field paying same prices as Magnolia Petroleum Co.

‡Lockhart prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co.

ARKANSAS AND NORTH LOUISIANA

Standard Oil Co. of Louisiana

Caddo below 32°	2.10
32° to 34.9°	2.25
35° to 37.9°	2.35
38° and above	2.45
Homer below 31°	1.85
31° to 32.9°	2.00
33° to 34.9°	2.10
35° and above	2.20
Haynesville below 33°	2.00
33° and above	2.10
El Dorado below 33°	2.00
33° to 34.9°	2.10
35° to 36.9°	2.20
37° and above	2.30
Bull Bayou, 32° to 34.9°	1.95
35° to 37.9°	2.10
38° and above	2.25
Cotton Valley	1.20
DeSoto	2.20
Crichton	2.10
Bellevue	1.50
Smackover, below 24°	1.10
24° to 24.9°	1.35
25° to 25.9°	1.40
26° to 26.9°	1.45
27° and above	1.50
*Stephens, Ark., below 26°	1.45
26° and above	1.65
†Calion (East El Dorado)	.95
‡Urania	1.15

Other companies posting in these fields are: Gulf Pipe Line Co.; Atlantic Oil Producing Co. in Homer, Haynesville, El Dorado and Smackover; The Texas Company in Caddo, Bull Bayou, DeSoto, Crichton and Smackover.

*Posted by the Atlantic Oil Producing Co. †Posted by the Gulf Pipe Line Co. ‡Posted by the Louisiana Oil Refining Corp.

ROCKY MOUNTAIN STATES

Ohio Oil Co.—Midwest Refining Co.

Rock Creek, (Wyo.)	$2.25
Salt Creek—	
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° and above	2.37
Big Muddy	2.25
Mule Creek	1.75
Grass Creek, light	2.40
Grass Creek, heavy	.90
Elk Basin	2.40
Lance Creek	2.40
Rex Lake	1.45
Osage	2.40
Lost Solider (contract)	1.35
Greybull-Torchlight	2.15
Hamilton Dome	1.35
Cat Creek (Mont.)	2.40
Sunburst (Mont.)	1.05
Florence (Colo.)	1.60
Artesia	1.95
Hogback (N. M.)	2.45

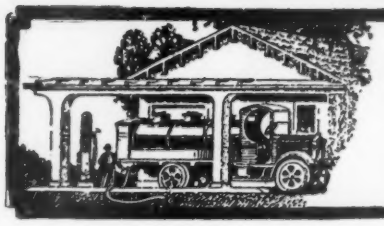
Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency

Penna Grade Oil in New York Trans-

(Continued on Page 148)



TANK WAGON MARKETS

Tankwagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, June 22.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)
Main Service Station Price

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Chicago Dist.—				
†Less than 100 gals.	19.0	21.0	...	15.5

Tank wagon prices on April 19, 1922; g. up 1½c; May 8, up 1c; June 27, g. and k. up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c; k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c, k. up 1c; April 16, 1926, k. up 1c; April 24, 1926, k. up ½c; April 29, 1926, g. up 1c, k. up ½c; May 6, 1926, k. up ½c May 17, g. and k. up 1c.

Decatur, Ill.	19.2	21.2	...	16.0
East St. Louis	18.1	20.35	...	15.1
Joliet	19.4	21.4	...	16.2
Peoria	19.2	21.2	...	16.0
Quincy	19.2	21.2	...	15.8
Davenport, Ia.	21.5	23.5	2.0	16.4
Des Moines	21.5	23.5	2.0	16.4
Keokuk	21.5	23.5	2.0	16.4
Sioux City	21.0	23.0	2.0	16.0
Duluth, Minn	22.5	24.5	2.0	17.1
Minneapolis	22.2	24.2	2.0	17.1
La Crosse, Wis.	22.2	24.2	2.0	16.9
Milwaukee	21.1	23.1	2.0	15.8
Madison	21.3	23.3	2.0	16.0
Detroit, Mich.	21.8	23.8	2.0	16.7
Grand Rapids	21.7	23.7	2.0	16.6
Saginaw	21.9	23.9	2.0	16.8
Evansville, Ind.	22.0	24.0	3.0	16.0
Fort Wayne	22.4	24.4	3.0	16.4
Indianapolis	22.2	24.2	3.0	16.2
South Bend	22.4	24.4	3.0	16.4
Fargo, N. D.	22.9	24.9	1.0	19.1
Huron, S. D.	23.5	25.5	3.0	17.6
Sioux Falls	22.0	24.0	3.0	17.1
*K. C., Mo.	21.9	23.9	3.0	14.8
*Springfield	21.8	23.8	3.0	15.7
*St. Louis	20.6	22.9	2.5	15.5
*St. Joseph	21.0	23.0	2.5	15.4
‡Wichita, Kan.	19.8	21.8	2.0	15.4
Bartlesville, Ok.	20.8	22.8	3.0	15.3

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 18.0.
‡At all Kansas points a discount of 1 cent a gallon is allowed from the tank wagon postings on dumps of 50 gallons or more.

The following monthly rebate system is effective on tank wagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1½ cents; over 10,000 gallons, 2 cents. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

SOUTHWESTERN DISTRICT
***Magnolia Petroleum Co.**

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Dallas, Tex.	†21.0	21.0	1.0	15.0
Fort Worth	†21.0	21.0	1.0	15.0
Houston	†21.0	21.0	1.0	15.0
San Antonio	†21.0	21.0	1.0	15.0
El Paso	†22.0	22.0	1.0	16.0
Texarkana	†20.0	20.0	1.0	15.0
Muskogee, Ok.	20.0	23.0	3.0	16.0
Oklahoma City	17.0	20.0	3.0	16.0
Tulsa	20.0	23.0	3.0	16.0
Little Rock	22.0	25.0	4.0	16.5
Ft. Smith, Ark.	22.0	25.0	4.0	16.5

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases as in the tank wagon discounts.

†Magnolia maintains only a retail schedule in Texas with dealers and large consumers allowed a flat 3-cent discount.

CENTRAL SOUTH DISTRICT
Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
*New Orleans	20.5	23.5	3.0	15.0
Alexandria	20.0	23.0	2.0	16.0
Baton Rouge	19.0	22.0	2.0	14.5
LaFayette	20.0	23.0	2.0	15.5
Lake Charles	20.5	23.5	2.0	16.0
Shreveport, La.	19.0	22.0	2.0	15.0
Memphis, Tenn.	21.0	24.0	3.0	17.0
Chattanooga	23.0	25.0	3.0	17.5
Knoxville	23.0	26.0	3.0	18.0
Nashville	22.0	25.0	3.0	18.0
Bristol	23.5	26.5	3.0	17.5
Little Rock Ark	22.0	25.0	4.0	16.5

*Tax of 3 cents includes city tax of 1 cent.

SOUTHERN DISTRICT
Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Atlanta, Ga.	25.0	28.0	3.5	20.0
Augusta	25.0	28.0	3.5	20.0
Macon	25.0	28.0	3.5	20.0
Savannah	23.0	25.0	3.5	18.0
Birm'gham, Ala	22.0	25.0	2.0	19.5
Mobile	21.0	24.0	2.0	18.0
*Montgomery	23.0	26.0	3.0	20.5
Clarksdale, Miss	23.0	26.0	4.0	17.5
Jackson	23.0	26.0	4.0	16.5
Natchez	22.5	25.5	4.0	17.0
Vicksburg	22.5	25.5	4.0	17.0
Jack'ville, Fla.	23.0	26.0	4.0	18.0
Miami	25.0	28.0	4.0	19.5
Pensacola	23.0	25.0	4.0	18.5
Tampa	23.0	26.0	4.0	18.0
Covington	24.0	27.0	5.0	19.0
Louisville	25.0	28.0	5.0	18.0
Lexington, Ky.	25.0	28.0	5.0	19.0

*In addition to the state tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene. Prices in Georgia include ½ cent inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of ½ cent on kerosene only.

ATLANTIC COAST DISTRICT
Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Atlantic City	19.0	....	...	16.0
Newark, N. J.	19.0	21.0	...	16.0
Anapolis, Md.	21.0	....	2.0	16.0
Baltimore	21.0	24.0	2.0	16.0
Cumberland	21.0	24.0	2.0	16.0
Washington	21.0	24.0	2.0	16.0
Danville, Va.	23.5	....	4.5	16.0
Norfolk	23.5	26.5	4.5	16.0
Petersburg	23.5	26.5	4.5	16.0
Roanoke	23.5	26.5	4.5	16.0
Richmond	23.5	26.5	4.5	16.0
Charleston, W. Va.	22.5	25.5	3.5	16.0
Keyser	22.5	....	3.5	16.0
Parkersburg	22.5	22.5	3.5	16.0
Wheeling	22.5	25.5	3.5	16.0
Charlotte, N. C.	23.5	26.5	4.0	16.0
Hickory	23.5	....	4.5	16.0
Mt. Airy	23.5	26.5	4.0	16.0
Salisbury	23.5	26.5	4.0	16.0
Charleston, S.C.	24.5	27.5	5.0	16.0
Columbia	24.5	27.5	5.0	16.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT
Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Albany, N. Y.	21.0	....	...	17.0
*New York	21.0	....	...	17.0
Buffalo	20.0	....	...	17.0
Rochester	21.0	....	...	15.0
Syracuse	21.6	....	...	17.0
Boston, Mass.	21.0	....	...	17.0
Augusta, Me.	24.0	....	3.0	17.0
Manchester, N. H.	23.0	....	2.0	17.0
Burlington, Vt.	23.0	....	2.0	17.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND
Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
*Pittsburgh, Pa.	20.0	25.0	...	17.0
*Philadelphia	20.0	25.0	...	17.0
*Scranton	20.0	25.0	...	17.0
*Allentown	20.0	25.0	...	17.0
Altoona	20.0	25.0	...	17.0
*Erie	20.0	25.0	...	17.0
Dover, Del.	22.0	25.0	2.0	17.0
Wilmington	22.0	25.0	2.0	17.0
Springf'd, Mass.	21.0	23.0	...	17.0
Worcester	21.0	24.0	...	17.0
Boston	21.0	24.0	...	17.0
Providence, R.I.	22.0	24.0	1.0	17.0
Hartford, Conn.	23.0	26.0	2.0	16.0
New Haven	23.0	26.0	2.0	17.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

OHIO
Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
All Ohio points	22.0	24.0	2.0	17.0

PACIFIC COAST DISTRICT
Standard Oil Co. (California)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
San Francisco	18.0	22.0	2.0	15.5
Los Angeles	16.5	20.5	2.0	15.5
Fresno	18.5	22.5	2.0	17.5
Reno, Nev.	23.5	27.5	4.0	19.0
Portland, Ore.	19.0	23.0	3.0	16.5
Seattle, Wash.	18.0	22.0	2.0	16.5
Spokane	22.0	26.0	2.0	20.5
Tacoma	18.0	22.0	2.0	16.5
Phoenix, Ariz.	25.0	28.0	3.0	21.5

CALIFORNIA
***Standard Oil Co.-Union Oil Co.**

Gravity—	Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans-Dom'guez Torrance-Inglewood	Whittier La Habra Montebello	Kern River Newhall McKittrick Midway-Sunset Elk Hills Lost Hills Beiridge	Coyote	Santa Fe Springs	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.87	.85	.75	.85	....	.75	.75	.85
16°	.90	.85	.75	.85	....	.75	.75	.85
17°	.94	.85	.75	.85	....	.75	.75	.85
18°	.98	.86	.75	.86	....	.75	.75	.85
19°	1.04	.87	.75	.87	....	.75	.75	.85
20°	1.10	.89	.82	.90	.89	.79	.78	.90
21°	1.16	.91	.90	.98	.91	.86	.81	.97
22°	1.22	.94	1.00	1.06	.94	.93	.85	1.04
23°	1.28	.97	1.11	1.14	.97	1.00	.89	1.11
24°	1.34	1.01	1.22	1.22	1.02	1.07	.93	1.18
25°	1.40	1.05	1.33	1.30	1.08	1.14	.97	1.25
26°	1.46	1.09	1.44	1.38	1.16	1.21	1.01	1.32
27°	1.52	1.13	1.55	1.46	1.24	1.28	1.05	1.39
28°	1.58	1.17	1.66	1.54	1.32	1.35	....	1.46
29°	1.64	1.21	1.77	1.62	1.40	1.42	....	1.53
30°	1.70	1.25	1.88	1.70	1.48	1.49	....	1.60
31°	1.76	....	1.99	....	1.60	1.56	....	1.67
32°	1.84	....	2.10	....	1.72	1.63	....	1.73
33°	1.92	....	2.21	....	1.84	1.70	....	1.79
34°	2.00	....	2.32	....	1.96	1.77	....	1.85
35°	2.08	....	....	....	2.08	1.84	....	1.92
36°	2.16	....	....	....	2.16	....	....	....
37°	2.24	....	....	....	2.24	....	....	....
38°	2.34	....	....	....	2.34	....	....	....
39°	2.44	....	....	....	2.44	....	....	....
40°	2.54	....	....	....	....	....	....	....
41°	2.64	....	....	....	....	....	....	....
42°	2.74	....	....	....	....	....	....	....

*Column 2—Long Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 3—Whittier and La Habra crudes, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 23 degrees; Lost Hills and Beiridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 9—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

NEBRASKA
Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Omaha	21.25	23.25	2.0	16.0
McCook	22.75	24.75	2.0	17.5
Norfolk	21.75	23.75	2.0	16.5
North Platte	22.75	24.75	2.0	17.25
Scottsbluff	22.25	24.25	2.0	17.75

ROCKY MOUNTAIN DISTRICT
Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Incids tax of	Kero. Tank wagon
Denver, Colo.	22.0	22.0	2.0	19.0
Pueblo	22.0	24.0	2.0	19.0
Casper, Wyo.	22.5	24.5	2.5	17.5
Cheyenne	23.5	25.5	2.5	19.0
Butte, Mont.	24.0	24.0	2.0	21.0
Helena	26.0	28.0	2.0	21.0
Salt Lake, Utah	26.0	28.0	2.5	19.0
Boise, Idaho	27.0	29.0	3.0	21.0
Albuquerque, N. Mex.	29.5	29.5	3.0	21.0

STANDOLIND FURNACE OIL
(Standard Oil Co. of Indiana)

1 to 149 gallons	11.0
50 to 399 gallons	10.0
400 to 849 gallons	9.5
850 or more gallons	9.0

TANKWAGON PRICE CHANGES

June 16—Standard Oil Co. of Indiana posted tankwagon prices on furnace oils. The schedule is shown in the tankwagon price table.

CRUDE PRICE CHANGES

June 21—Humble Oil & Refining Co. started posting Panhandle, Texas, crude, adding five grades to the schedule as posted by the Magnolia Petroleum Co. and the Kay County Gas Co. The Humble prices represent an increase of 5 to 20 cents on crude above 39.9 gravity. The same company also posted prices representing a decline of 8 cents for each degree under 28 gravity for north and east central Texas crude and added Nacona oil to the schedule.

CRUDE OIL PRICES

(Continued from Page 147)

sit Lines (New York)	$3.65
Bradford District Oil in National Transit Lines (Pennsylvania)	3.65
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.55
Penna Grade Oil in Southwest Pa. Line Lines (West Virginia)	3.55
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.50
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.30
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.40
Corning Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.55
Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky)	2.50
Somerset Light Oil in Cumberland Pipe Lines (Kentucky)	2.65
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	1.25
Gaines (Pennsylvania)	3.10
Keister (Pennsylvania)	2.45

MIDDLE WESTERN STATES
Ohio Oil Co.

Lima	2.48
Wooster	2.55
Illinois	2.37
Indiana	2.25
Princeton	2.37
Plymouth	1.90
Waterloo	1.35
*Western Kentucky, 32.9° and below	2.10
33° to 35.9°	2.20
36° to 38.9°	2.30
39° and above	2.40
†Cumberland, Barren and Monroe Counties	2.65
§Oil Springs (Canada)	2.95
§Petrolia (Canada)	2.88

*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO

*Tuxpam light (f.o.b. Mex. ports)	$1.35
§Panuco heavy (f.o.b. Mex. Ports)	1.15
Tuxpam (New York)	2.15
Panuco (New York)	1.80

*Plus 32.328c tax. §17.631c tax.

XUM

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Brief Items for Plant Operators

Government Completes Testimony in Trial of Patent Club Case

The trial of the suit of the Government against The Texas Company involving the legality of the Adams patents for cracking which opened in Federal Court at New York on June 8, was continued last week until October after the Government had presented its case. The hearing at New York before Special Master Charles E. Martindale was one phase of the Government suit against several companies involved in what is commonly known as the "Patent Club Case."

This suit was filed in 1924, the Government alleging that The Texas Company, Standard Oil Co. of Indiana, Standard Oil Co. of New Jersey and Gasoline Products Co. had pooled their patent rights for the operation of cracking processes in violation of the Sherman anti-trust law. Since the original suit was filed the M. W. Kellogg Co., which has an interest in the Cross process and Joseph H. Adams have been added to the list of defendants.

Recently the Government amended its petition alleging that the Adams patents which are now owned by The Texas Company, were secured from the patent office through fraud. The hearing in New York last week was concerned with this phase of the case.

The first witness called by the Government was Joseph L. Klaus, of Brooklyn. Klaus, a carpenter, had at one time been employed by Adams and in 1915 and 1918 had signed affidavits in support of Adams' application for patents. These affidavits tell of the experimental work done by Adams on which the patents were based.

The Government attempted to show that Klaus did not have sufficient knowledge of the technical phases of the experimental work to be qualified to sign the affidavits. He testified that only parts of the affidavits had been read to him.

W. F. Besselman of New Orleans, formerly employed by the Valvoline Oil Co. of Edgewater, N. J., testified that he had signed affidavits in connection with the Adams patent applications without knowledge of their content. Other witnesses gave similar testimony. Testifying as an expert for the Government, George B. Gifford, a consulting engineer, said that pressure had no direct bearing on cracking, was simply a development of the high temperature used in cracking. He testified that he had been asked by Mr. Adams to sign affidavits in support of his patents and that he had refused because he was not familiar with the experimental work.

David G. Probert, of Pittsburgh, testified that he had examined the Adams process at a plant located near Pittsburgh and that he had not seen any valves for the regulation of pressure. The Government introduced considerable testimony in regard to the pressure phase of the Adams patents as this is an important part of the Government contentions as to fraud.

Nathan L. Miller, former governor of New York, is representing The Texas Company in the trial. John W. Davis is representing the Standard companies. Attorneys and engineers for other parties interested in the case were in attendance at the trial last week.

NEW CRAIG REFINERY READY LATE IN JULY

CASPER, Wyo., June 19.—Ground was broken Wednesday for the new Craig refinery of The Texas Company, in Moffat County, Colorado. The new plant is to cost $500,000 and will have a capacity of 1,000 bbls. daily. The equipment will include two Holmes-Manley cracking units. It will operate on the oil from The Texas and Transcontinental wells in the Moffat Field, about 15 miles south of Craig and connected to Craig by pipeline. Through a possible arrangement for the exchange of crude from other fields, the Midwest Refining Co.'s production from the Iles Dome in Moffat County may also be run through the new refinery.

The Tow Creek and Rangeley Fields, on the western slope of the Continental Divide in Colorado, can also find the new refinery within easy shipping distance for their crude and should The Texas Company's proposed wells in the Moab district of Utah find production on the river bed leases, this crude will also go to the Craig plant.

The present methods of shipping the Moffat, Tow Creek and Rangeley oils by rail to the Florence refinery, in southeastern Colorado, or to the Wyoming refineries, places a heavy overhead on the production and it was to eliminate this cost that the Craig refinery was first proposed. The refinery products can be shipped at less cost than the crude oil and the products will find a ready market in the country around Craig and the cities and towns of northern Colorado.

At present, the gasoline and oil products used in northern Colorado are shipped in from either Florence or the Wyoming refineries. This makes a double tax on the consumers for the crude must pay a heavy freight rate out and then the refined products must pay another cost of shipment when sent back to this region.

The work on the new refinery is to be rushed with all possible speed. It is hoped the plant will be able to start fires under the stills by the latter part of July. This would mean a tremendous amount of construction work in the meantime, but The Texas Company's force of construction men have planned to place a large number of workers on the job and believe they can complete it on schedule.

PHILLIPS OPERATING FIRST ARTESIA PLANT

The Phillips Petroleum Co. has started operating its natural gasoline plant at Artesia, N. Mex. This is the first plant in New Mexico. The plant at the present time is handling several million feet of gas daily with a rated capacity of 7,000 gallons.

The Artesia plant is the thirty-fifth plant of the Phillips Company, the largest manufacturers in the world. The total capacity of all plants is now approximately 500,000 gallons daily.

ACTING REFINERY MANAGER

J. B. Edwards, formerly of the Tide Water Oil Co., has been appointed acting refinery manager for the White Star Refining Co. Mr. Edwards will have his headquarters at the refinery, located at Wood River, Ill. He succeeds C. E. Gerteis, resigned.

ENLARGE LOUISVILLE PLANT

The Louisville Petroleum Refining Co. will enlarge its refinery at Louisville, Ky. The capital stock of the company has been increased for that purpose. All divisions of the plant operations will be increased including the Dubbs cracking equipment.

AMONG THE TECHNICAL MEN

B. A. Whitney, superintendent of natural gasoline plants in Oklahoma and Kansas for the Transcontinental Oil Co., is one of the pioneers in the industry in the Mid-Continent. Starting natural gasoline construction and engineering work in 1908, Mr. Whitney has been engaged in that business since then.

—Photo by Rivkin

B. A. Whitney

Mr. Whitney's first practical natural gasoline plant work was with D. W. Franchot, one of the earliest gasoline manufacturers. With Mr. Franchot he was engaged in general plant construction and engineering work and also had charge of the installation of a blending process at a Kiefer, Okla., plant.

After two years with Mr. Franchot, he resigned to accept a position as superintendent of natural gasoline plants of the old Riverside-Western Oil Co. When this company was taken over by the Transcontinental Oil Co. six years ago, he continued as superintendent of the western division, which position he now holds.

Under Mr. Whitney's supervision, the Transcontinental Oil Co. has gradually expanded its natural gasoline department until it now has eight plants with a total of 27,500 gallons daily production in Oklahoma and Texas.

In addition to his company duties, Mr. Whitney has been active in affairs of the Association of Natural Gasoline Manufacturers and is now a director of the organization.

Mr. Whitney received his technical training in the University of Kansas at Lawrence, being graduated in 1904 from the engineering school. He is a native of Kansas.

NEW CRACKING SUIT FILED BY UNIVERSAL

The Universal Oil Products Co., during the past week, filed suit against the Skelly Oil Co. for the alleged infringement of patent rights in the operation of the Cross cracking process at the latter's refinery located at El Dorado, Kans. The suit is considered a test case which will determine the liability of the licensees of the Cross product.

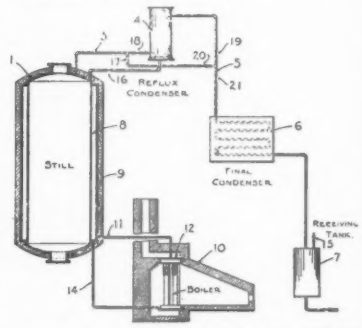
The Universal company several months ago filed suit against the Gasoline Products Co. and the M. W. Kellogg Co., owners of the Cross process, alleging infringement of patents. The Skelly suit, however, was the first to be filed against an actual licensee and operator of the Cross process. The Skelly company has had two Cross units in operation for over two years.

Eleven patents and over 50 claims are the basis of the latest cracking suit to be filed. The numbers of the patents and claims are as follows: No. 1,392,629, claims 1 to 9; No. 1,484,445, claims 1, 2, and 3; No. 1,488,325, claims 4, 5, 6 and 8; No. 1,517,830, claim No. 1; No. 1,534,927, claims 3, 4, 9, 10, 11, 14 and 15; No. 1,525,281, claims 2, 3, 4, 5, 7, 8, 9, and 10; No. 1,550,568, claims 1 and 3; No. 1,550,607, claims, 1, 2 and 3; No. 1,551,090, all claims; No. 1,378,307, claims 5, 6 and 8.

The Universal company last October filed suit against the Skelly Oil Co. for alleged infringement of patents in the operation of the Jenkins process, the main cracking process now in operation at the El Dorado refinery. It is expected that this suit, which is separate from that of the Cross, will come up for trial late this fall.

Recent Patents

1,586,994. Art of Converting Hydrocarbon Oils Into Lower Boiling Products. Frank A. Howard, Elizabeth, N. J., assignor to Standard Development Co., a corporation of Delaware. Filed August 16, 1922. Serial No. 582,113. 4 Claims. (Cl. 196—119.)



3. Process of cracking hydrocarbons, comprising heating mercury in a closed system to a temperature above 700 degrees Fahrenheit, subjecting the hydrocarbons to indirect heat of the mercury vapor at such temperature, whereby the hydrocarbons are cracked by uniformly applied heat, taking off vaporous cracked products, and condensing the same.

1,587,649. Desulphurizing Oils. Ernest M. Johansen, Fall River, Mass., assignor to the Atlantic Refining Co., Philadelphia, Pa., a corporation of Pennsylvania. Filed May 1, 1923. Serial No. 635,967. 6 Claims. (Cl. 196—33.)

1. In the treatment of mineral oil, the method which comprises blending oils containing, respectively, sour and corrosive sulphur, and subjecting the mixture to the action of sodium plumbite.

(Additional Patents on Page 162)

PROGRAM MADE ROOM FOR RECREATIVE PLEASURES

(Continued from Page 31)

convention who suffered under the trap and bunker problems presented by nature and Donald Rose, who laid out the course.

It is said of some of the convention guests who found the swimming pools to their liking, that they had to be cased off four or five times a day because they were continually running into water. The 100,000-gallon white-tiled and brass-railed indoor tank and the newly opened Broadmoor beach, which takes up the north end of Cheyenne Lake lying under the west promenade of the hotel itself were equally popular, the hardier oil and supply men taking to the outdoor pool, while the luxury loving boys remained in where it was warmer.

Four tennis courts were kept busy and the few polo players among the 160 were given the chance to play on one of the finest polo grounds in the country. Excellent ponies were available.

Chance for Mountain Climbers

The hotel provided saddle horses and a huge garage was filled with cars available to those desiring a little nearby touring. The recently opened Broadmoor-Cheyenne Highway, winding for six tortuous miles up the face of Cheyenne Mountain from the hotel was one of the features.

Other features entering into the activity the convention held at this Colorado resort hotel are many, but were not provided on the convention program since only four days could be stolen from the production of the nation's oil supply for the purposes of holding the convention on standardization.

A great deal of work was accomplished, work made easy by the interjection of recreation into the program by a wise program committee. Decisions of vital significance to the production of oil and gas were reached, and it was again demonstrated that a convention split up into small units having a specific group of problems to cover is a convention dedicated to efficiency. Only because of the earnestness of those attending this second of the semiannual meetings of the committees of standardization was it possible to work in the recreation hours enjoyed each day by delegates.

Golf and the Dinner

The big outdoor feature of the program was the golf tournament on June 18, which consisted of three flights, Class A, B and C. The prizes were provided by William S. Farish, of Houston, Tex., president of the American Petroleum Institute; the General Petroleum Corp., Los Angeles; Gulf company, Houston; Hope Construction & Refining Co., Pittsburgh; Humble Oil & Refining Co., Houston; Midwest Refining Co., Casper; Phillips Petroleum Co., Bartlesville; Standard Oil Co. of California, San Francisco; Sun Oil Co., Dallas; The Texas Company, Houston; Union Oil Co. of California, Los Angeles. In the evening Thomas A. O'Donnell of Los Angeles gave a dinner to show his appreciation of the work done on behalf of standardization by the members of the various committees. Mr. O'Donnell was president of the American Petroleum Institute for several years and was always an ardent supporter of standardization.

Registration at Conference

Following are the names of those who registered at the semiannual conference of all special committees of the American Petroleum Institute on the standardization of oil field equipment, held in the Broadmoor Hotel, Colorado Springs, June 15, 16 and 17:

Allison, R. E., drilling contractor, Shreveport; Anderson, Hallam H., Shell Co. of California, Los Angeles; Archer, M. T., National Supply Co., Toledo, Ohio; Baker, D., Noble Drilling Co., Cushing, Okla.; Barton, J. M., National Tube Co., Elwood City, Pa.; Bearce, H. W., Bureau of Standards, Washington, D. C.; Bell, E. L., Shaffer Oil & Refining Co., Tulsa, Okla.; Bernsen, Franklin, E., Lucey Manufacturing Corp., Tulsa, Okla.; Bevan, Lawrence W., Hazard Manufacturing Co., Wilkes-Barre, Pa.; Bishop, Harry W., Jr., Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.; Black, L. J., Beaumont Iron Works, Beaumont, Tex.; Bowlus, Glenn H., General Petroleum Corp., Los Angeles, Calif.; Bowman, A. M., Humble Oil & Refining Co., Houston, Tex.; Brodneck, John K., St. Louis, Mo.; Broderick, M. H., The Broderick Boiler Co., Muncie, Ind.; Brown D. R., The O. C. S. Manufacturing Co., Coffeyville, Kans.; Bruce, N. P., Rubber Association of America, Akron, Ohio; Burgess, L. P., D. & B. Pump & Supply Co., Los Angeles, Calif.; Butts, A. E., A. O. Smith Corp., Tulsa, Okla.; Backon, F. M., Mohawk Drilling Co., Ardmore, Okla.; Bill Barr, Regan Forge & Engineering Co., Los Angeles, Calif.

Caldwell, George R., A. Leschen & Sons Rope Co., St. Louis, Mo.; Campbell, A. F. Fenwick-Reddaway Manufacturing Co., Tulsa, Okla.; Craig, C. B., Bessemer Gas Engine Co., Grove City, Pa.; Cranfill, T. B., Cranfill Brothers Oil Co., Dallas, Tex.; Crotty, John T., Republic Supply Co., Houston, Tex.; Cunningham, James E., Wheeling Steel Corp., Wheeling, W. Va.; Cornell, H. D., Western Supply Co., Tulsa, Okla.

Dale, D. R., The S. M. Jones Co., Toledo, Ohio; Davies, T. D., National Tube Co., Pittsburgh, Pa.; Daw, Mark W., Shell Oil Co. of California, San Francisco; Denni, Harry, Kansas City Structural Steel, Kansas City, Mo.; Dircher, H. S., Petroleum Iron Works Co., Sharon, Pa.; Dudley, R. L., The Oil Weekly, Houston, Tex.; Duff, R. L., Standard Oil Co. of New Jersey, Roselle, N. J.; Dickey, S. J., General Petroleum Corp. of California, Los Angeles; Dursh, John J., Oil Well Supply Co., Casper, Wyo.

Evans, W. S., Lucey Manufacturing Corp., New York; Evans, W. W., Rubber Association of America, Akron, Ohio; Endicott, Paul, Phillips Petroleum Co., Bartlesville, Okla.

Fondren, W. W., Humble Oil & Refining Co., Houston, Tex.; Faulkner, D. S., Union Tool Co., Torrance, Calif.; Fleming, Thomas F., Jr., Oil Well Supply Co., Pittsburgh, Pa.; Fritz, Charles H., Oklahoma Iron Works, Tulsa, Okla.; Freeman, J. S., Skelly Oil Co., Tulsa, Okla.

Gibbons, A. G., A. O. Smith Corp., Milwaukee, Wis.; Golding, Dudley S., oil operator, Wichita Falls, Tex.; Greve, E. E., Oil Well Supply Co., Pittsburgh, Pa.

Hathaway, C. E., Stanley Belting Corp., Chicago, Ill.; Hannaker, R. G., Humble Oil & Refining Co., Houston, Tex.; Hampton, L. C., Union Oil Co. of California, Los Angeles; Hanrahan, R. V., Humble Pipe Line Co., Houston, Tex.; Harshton, Z. F., Imperial Belting Co., Chicago, Ill.; Hazeltine, Ben, Wheeling Steel Corp., Wheeling, W. Va.; Herpel, Harry C., National Tube Co., McKeesport, Pa.; Higgins, Edwin, Secretary Chamber of Mines and Oil, Los Angeles, Calif.; Hill, F. F., Union Oil Co. of California, Los Angeles; Hinton, A. F., National Petroleum News, Tulsa, Okla.; Hochenauer, C. J., A. O. Smith Corp., Milwaukee, Wis.; Hoffman, Albert H., National Pigments & Chemical Co., St. Louis, Mo.; Hooper, J. E., Sinclair Oil & Gas Co., Houston, Tex.; Howe, James F., American Steel & Wire Co., Worchester, Mass.; Hughes, William K., Continental Supply Co., St. Louis, Mo.; Haseltine, R. S., Guiberson Corp., Dallas, Tex.; Hilton, L. D., Regan Forge & Engineering Co., Houston, Tex.; J. H. Hudson, Ardmore, Okla.; Harris, Hugh, M. Lucey Manufacturing Corp, Chattanooga, Tenn.; Harris, D. B., Humble Oil & Refining Co., Shreveport, La.

Jacques, G. H., Midwest Refining Co., Casper, Wyo.; Jones, P. C., The S. M. Jones Co., Toledo, Ohio; Jones, Roy B., Panhandle Refining Co., Wichita Falls, Tex.

Knight, C. S., American Steel Wire Co., Chicago, Ill.; Kein, Lester, Oil Well Supply Co., Los Angeles, Calif.; Klingler, G. H., Wickwire-Spencer Steel Co., Emlenton, Pa.; Krause, C. R., Lee C. Moore Co., Tulsa, Okla.; Kesinger, E. V., Empire Companies, Bartlesville, Okla.; Kunze, A. D., Rubber Association of America, New York City; Knapp, William A., Butler Manufacturing Co., Kansas City, Mo.

Lad, H. W., Midwest Refining Co., Casper, Wyo., LaFonte, C. B., United States Rubber Co., Denver, Colo.; Langworthy, L. L., Midwest Refining Co., Casper, Wyo.; Laury, W. H., Axelson Machinery Co., Los Angeles, Calif.; Leschen, Harry J., A. Leschen & Sons Rope Co., St. Louis, Mo.; Lucey, J. F., Lucey Petroleum Co., Dallas, Tex.

McAnnelly, Lee W., Rossendale, Reddaway B. & H. Co., Dallas, Tex.; McCune, L. E., Murray Rubber Co., Trenton, N. J.; McLaine, W. L., General Petroleum Corp., Los Angeles, Calif.; McConnell, Glenver, Roxana Petroleum Corp., Tulsa, Okla.

Mapes, Clarence T., Oil Well Supply Co., Crafton, Pa.; Marks, W. G., John A. Roebling Sons Co., Los Angeles, Calif.; Markt, Howard, National Petroleum News, Cleveland, Ohio; Martin, P. W., Smalley Gen. Co., Bay City, Mich.; Morris, Clarence, The Oil and Gas Journal, Tulsa, Okla.; Milne, A., Jones & Laughlin Steel Corp., Pittsburgh, Pa.; Mueller, Paul M., Pratt & Whitney, Hartford, Conn.; Murray, C. M., Murray Tool & Supply Co., Tulsa, Okla.; Mohler, F. W., International Derrick & Equipment Co., Dallas, Tex.; Minor, ——, Regan Forge & Engineering Co., Los Angeles, Calif.

Neckerman, William M., The Youngstown Sheet & Tube Co., Youngstown, Ohio; Nowery, B. M., The Palmer Corp., Shreveport, La.

Olson, A. O., Noble Drilling Co., Ardmore, Okla.

Patrick, Sam F., S. F. Patrick Drilling Co., Stroud, Okla.; Peake, A. W., Midwest Refining Co., Casper, Wyo.; Pew, J. Edgar, Sun Oil Co., Dallas, Tex.; Pinckney, P. H., National Tube Co., Lorraine, Ohio; Phelps, F. S., American Steel & Wire Co., San Francisco, Calif.; Porter, Hollis P., Gypsy Oil Co., Tulsa, Okla.; Prior, F. O., Midwest Refining Co., Casper, Wyo.

Regan, Joseph W., Regan Forge & Engineering Co., Los Angeles, Calif.; Reuff, George A., National Tube Co., McKeesport, Pa.; Riney, A. H., Phillips Petroleum Co., Bartlesville, Okla.; Runkle, Harry M., International Derrick & Equipment Co., Columbus, Ohio.

Sanderson, A. D., Standard Oil Co. of New Jersey, Elizabeth, N. J.; Scarff, Howard R., The Rossendale-Reddaway Belting & Hose Co., Newark, N. J.; Scharpenberg, C. C., Standard Oil Co. of California, Bakersfield, Calif.; Schemlein, William, The Parkersburg Rig & Reel Co., Parkersburg, W. Va.; Scott, H. D., Wheeling Steel Corp., Wheeling, W. Va.; Seaver, W. H., N. S. Steel Products Co., San Francisco, Calif.; Shaffer, Burt, Wheeling Steel Corp., Wheeling, W. Va.; Sherman, C. H., Union Oil Co. of California, Fort Collins, Colo.; Shouvlin, D. R., Superior Gas Engine Co., Springfield, Ohio; Sleeman, Earl C., Pittsburgh Steel Products Co., Monessen, Pa.; Spang, G. A., Spang & Co., Butler, Pa.; Staggs, H. M., Atlantic Oil Producing Co., Shreveport, La.; Steen, A. B., The Texas Co., Houston, Tex.; Streeter, Claude O., Graton & Knight Co., Worcester, Mass.; Suman, John R., Rio Bravo Oil Co., Houston, Tex.; Sunderland, Charles C., John A. Roebling Sons Co., Trenton, N. J.; Swigart, T. E., Shell Oil Co. of California, Hollywood, Calif.

Teats, N. W., R. & J. Dick Co., Inc., Passaic, N. J.; Texter, H. G., Standard Seamless Tube Co., Tulsa, Okla.; Timbs, Edward, Union Tool Co., Los Angeles, Calif.; Tobin, W. B., International Derrick & Equipment Co., Los Angeles, Calif.; Trax, D. L., Gypsy Oil Co., Tulsa, Okla.; Trout, W. A., Emsco Derrick & Equipment Co.

Watson, C. D., Carter Oil Co., Tulsa, Okla.; Weiss, C. R., Link Belt Co., Indianapolis, Ind.; Wherry, Henry P., Rossendale-Reddaway Belting & Hose Co., Newark, N. J.; Whyte, George S., Macwhyte Company, Kenosha, Wis.; Williams, E. H., National Supply Co., Carnegie, Pa.; Wilson, R. A., Guiberson Corp., Dallas, Tex.

CALIFORNIA MARKET WATCHING EXPERIMENT

LOS ANGELES, Calif., June 19.—The extreme competition between service stations in and around Los Angeles for three years has, if anything, become more intense, and is causing larger marketing companies much concern. The Independent Service Station Operators Association recently reported that on a leading boulevard in Los Angeles, there are 48 service stations within 47 blocks. This clearly shows the available sales are so split up it is out of the question for even a majority of these 48 to do sufficient gallonage at present prices to make the station a paying proposition.

Many company owned stations have lost considerable gallonage and have been operating at a loss, due to the excessive marketing expansion. Many company owned stations are in such areas, and are only permitted to continue operating by being carried along at the expense of some other phase of the business.

This situation shows no immediate signs of improving, so some larger companies have decided to experiment with their unprofitable stations, leasing them to individuals who are to sell nothing but the company products, but are to run the station as their own. The company owned stations have stressed service to the point where the cost of marketing is considerably more than for the independent operator. By leasing to the individual, the service will not be expected to be of the same high caliber. The operators of the station are not expected to wear white uniforms. Consequently, the lessee will put in a tire shop, oil and greasing rack, battery shop, and other additions, which the oil company was unable to install and operate. The station would then be known as a super service station, and with the added conveniences, will very likely sell more gasoline and oil.

The market policy of the Richfield Oil Co. has been very similar to this, practically all of its stations being super service stations operated by individuals. The success of this policy is reflected to a certain extent in their enormous increase in gasoline sales in the past two or three years, and it is possible this example is responsible for the experimenting along these lines by other companies. While the company owned service station with its pleasing appearance, and complete service, has been of great worth to the operating company from the point of view of advertising, it has been a very expensive unit and the executives evidently believe this form of advertising too expensive and are trying to reduce this expense.

Exports of California oil for the past week continued quite heavy. While the Atlantic Coast received almost 800,000 bbls. of California oil, less than 81,000 bbls. of this was gasoline. Over three-fourth of the total shipments was crude. Foreign shipments going out from Los Angeles, were also principally crude.

There has been no material change in the natural gasoline situation during the past week. The market is still strong with indications of remaining so.

TEXAS COURT DECISION INTERESTS LEASE MEN

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ion of some authorities it means the end of the "Texas 88 Special."

Big West Texas Leases

In west Texas and other areas where large blocks of acreage are necessary to justify excessive development costs, the new ruling is regarded with especial concern inasmuch as a landowner might demand excessive drilling or the forfeiture of large amounts of acreage. In the Panhandle, too, under this interpretation, landowners may be able to force operating companies to drill every 10 acres whereas geologists know that a location on each 40 acres will suffice. In the case of old producing properties which are operated at or near a loss, the operators may be forced to drill at inopportune times, such as periods of low market prices, rather than await better conditions. Inside wells may have to be drilled up at the command of the landowner rather than the need for oil and the judgment of the geologist and engineer. All of this is possible under the new ruling and the only thing necessary to bring it about in individual cases is for a landowner to bring suit and get a jury to agree with him. "Reasonable diligence" is not defined but is left to the discretion of the jury in each case.

That some unscrupulous landowners are not overlooking their opportunities is shown by the filing of a couple of suits against one of the largest companies in the Ranger district, and a couple of others in different areas. Ranger is a typical example of what could happen under such conditions. On some leases there, large wells stand alone in the middle of a tract due to the highly competitive drilling which caused the companies to drill their line wells and by the time those were finished production and market prices had both declined to such an extent that it would be throwing money away to drill up the remainder of the tract. Now, the landowner could compel such a wasteful course, provided only that he could get a jury to agree with him. Which isn't impossible.

HOMER S. FOX PROMOTED

WASHINGTON, D. C., June 19.—Homer S. Fox, of the Petroleum Division, Department of Commerce, has been appointed trade commissioner with station at London by Dr. Julius Klein, director of the Bureau of Foreign and Domestic Commerce. Mr. Fox was appointed to the Department of Commerce in March, 1922, being assigned as research assistant in the petroleum division. He was gradually promoted until he reached the position of acting chief of this division on December 1, 1923. He was assigned as acting chief of the department's mineral division, July 1, 1925.

DEATH OF JOHN L. HUFF

John L. Huff, a veteran oil producer of Warren County, Pennsylvania, died recently at his home after a brief illness. He is survived by his wife and one daughter, Miss Gertrude Huff, a school teacher of Jamestown, N. Y., and two sons, Howard Huff of Okmulgee, Okla., and J. E. Huff of Tulsa, Okla. Mr. Huff who was 74 years of age entered the oil business in the Bradford Field in 1877. He became a contractor and producer, and operated in various Pennsylvania and West Virginia fields until 1919 when he retired. He was widely known in the eastern fields.

E. W. MARLAND TO EUROPE

PONCA CITY, June 19.—E. W. Marland, president of the Marland Oil Co., is en route to Europe, sailing on June 23 from New York City and returning to America the last of August. He says it is strictly a business journey.

XUM

OSAGE OIL AND GAS LESSEES FAR APART

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ment had to determine the title to the residue gas.

"Our friends, the oil lessees," said Mr. Richardson, "seem to think that the dominant estate is owned by the oil lessees and that the gas lessees possess a subservient estate. We think both of these lessees stand on a parity."

Mr. Richardson said that the terms of the leases gave the oil and gas men similar estates. At any rate that was a matter for judical determination. The leases do not say anything about residue gas. They do not say that the residue gas belongs to the oil lessee. They say the casinghead gas shall belong to the oil lessee but even then he has a qualified ownership. He must extract the gasoline from it and that is all the interest he has in it. The residue belongs to the gas lessee. He cannot prevent the gas lessee from taking it. The oil lessee cannot transport a foot of the casinghead gas except for use on his lease and the adjoining lease.

Mr. Richardson said the Kay County Gas Co. had paid a bonus of over $600,000 for their gas and they had an investment of over $2,300,000 on account of booster stations. He said that when the Burbank Field came in they were told they would have to take the residue gas.

Told to Take the Gas

"Mr. Wright invited us," he said, "to take this casinghead gas. He said 'you will be charged with it and will pay a royalty if you do not'."

They had made a contract to sell a certain amount of that gas. They invested more than $1,000 and built pipelines and they are under contract to furnish the Empire Co. with this gas.

Mr. Richardson said: "What position are we in if we violate that contract and tell them we are going to give that gas back to the oil lessee? We would have to face damages and a loss of our booster stations put in at the request of the oil lessees and the Department. But they say we will produce more gas if we give them this gas. But if that is your gas to put back it will continue to be your gas to put back even if more is produced."

Replying to a question by Commissioner Burke, Mr. Richardson insisted that it was not possible to know at this time whether this residue gas will ever return to the surface. He said that the Interior Department in a bulletin had stated that there is no rejuvenation in a natural gas well.

He said there is not in the Burbank Field enough gas to do one-tenth of the work of renewing the pressure. Before anything is done in that respect in the Burbank Field competent engineers should be called in to determine whether there is enough gas to be of any service there.

R. L. Gordon, representing the gas lessees, said: "As representing the Indian Territory Illuminating Co., one of the gas lessees, we have offered two propositions to the oil lessees. The first was that they agreed to compensate us for our investment in booster stations and to take into consideration other factors involved and we would agree to their interpretation of the meaning of the casinghead gas clause. I have endeavored to have them state that they will negotiate with us and they have said they were unable to negotiate. We stand willing at any time to negotiate with the oil lessees on a basis of all the factors that enter into this case."

Casinghead Men Interested

John H. Kane, of the Phillips Petroleum Co., chairman of the Natural Gasoline Manufacturers Committee, presented the case of the casinghead industry. He said they had a technical committee working upon the regulations, and they wished to co-operate in every way in the interest of conservation for the use of the casinghead gas and tail gas in the best interests of the Osages.

C. C. Herndon, of the Skelly Oil Co., chairman of the casinghead gas committee, said that he thought the injection of air in the wells of the Osage would be detrimental to some or all of the interests involved. He thought the injection of gas would be beneficial to some or all interests at most or many places in the Osage. The injection of anything into these wells, he said, should be under the supervision of the Department of the Interior through their technical experts.

Superintendent Wright wanted to know what the situation would be if the Department recommended the use of tail gas for injection in the wells and the oil lessees said they would not pay for it.

Mr. Herndon replied that his own opinion was the oil lessee had a right to so much of the casinghead gas as he might need for properly conducting the rejuvenation process. How far the Department might go in that matter he did not know. A conflict might arise to require judicial determination but he did not think that was a good reason for the Department to decline to express an opinion if they are entitled to take such action.

The Interest of the Indians

James A. Veasey, on behalf of the oil lessees, said that a very impotanrt part of this question was being ignored which was its effect on the interests of the Osage tribe of Indians, and their contracts with the oil lessees. He said by implication the regulations make the residue gas the property of the oil lessee. The gas lessee merely had an option to take the residue gas. He believed that a fair interpretation of the regulations would show that the residue gas belonged to the oil people.

"We maintain," said Mr. Veasey, "that there will be no substantial diminution in this gas supply and therefore no substantial loss of the quantity. We make no claim to the gas except for conservation purposes."

S. S. Smith, of the Roxana Petroleum Co., insisted that the oil lessees do not take all the gas but only a portion, to restore the balance of equilibrium so that they would get back as much gas as they now have. The life of production both of oil and gas, he said, would be greatly increased up to 15 or 16 years. In other words he said that what they proposed was not revolution but only a gradual evolution.

At the conclusion of the hearing, it was understood that conferences would take place between the oil men and the Indian office looking to a further understanding of the problem before the office and that Commissioner Burke would take the entire matter under advisement.

PRESENT CONDITIONS IN THE MONROE FIELD

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that take all of the natural gasoline from the gas before the carbon is burned out. carbon black plants furnish employment for several hundred men.

Although the product is manufactured in cheap looking burning houses those houses represent a huge sum of money spent by progressive operators in improving manufacturing methods. Formerly the maximum production was obtained in the summer months with ideal atmospheric conditions. The minimum was reached on cold wintery days when icy blasts from the north swept over the 325 square-mile field. The major operating companies in the field have spent large sums of money to obtain the maximum production and most companies are now able to keep production on an even keel the year around.

Monroe is the manufacturing center of carbon black. Thirty-seven plants are operating in the field, turning out more than two-thirds of the world's supply. To keep Monroe leading in the manufacture of that product 275,000,000 feet of gas is burned daily in the field. From this amount of gas more than 275,000 pounds of carbon black is recovered. The average recovery of the field is a trifle better than one pound per each 1,000 feet of gas burned. The 37 plants are scattered in various sections of the field.

Most of Waste Eliminated

All of the carbon black is not removed from the gas when it is burned but as much as can be obtained by present manufacturing methods is recoverd. What black is not caught on the channel irons goes up in smoke. As the smoke finds its way out of the burning houses through various draft shafts it leaves its brand around the opening through which it escapes.

Tree tops around the plants are all smutty while the remaining green on the tall pines catch only a little of the black. The improvement in manufacturing methods has eliminated most of the waste and likewise the grime around the immediate vicinity of the plants. Most of the finished product that escapes into the air comes from the packing and compressing rooms. On windy days all doors to both rooms have to be shut tight to prevent the black from being blown everywhere save in its shipping bags.

It is said that one plant, operated very secretly in the Monroe Field makes about six pounds of carbon from each 1,000 feet of gas. It is known as the Thermatomic process. Very little is known of the process save that the gas is run into a huge cylinder and "cracked" or exploded.

Carbon black is delivered either in the paper bags or in brick form. For exporting and shipments to ink and phonograph concerns the black is shipped in brick form. But most of the output is shipped in paper bags to automobile manufacturers. It is estimated that 85 per cent of the carbon black made in Monroe goes to tire makers. It is shipped in car lots ranging from 16,000 to 50.000 pounds and in scales of 16, 20, 25, 30, 40 and 50,000-pound shipments.

The carbon black industry is a migratory one because of legislation and conservation methods. However, the industry in the Monroe Field has survived because of the field's isolation from industrial and domestic users of gas and because of the tremendous volume of gas there going to waste.

OKLAHOMA REFINED MARKET AGAIN QUIET

(Contined from Page 28)

jobbers have continued to buy only in small quantities.

The present weakness of refined markets has resulted in a price situation not at all favorable to refiners. A comparison with markets at this time last year shows that Oklahoma refiners now are getting from 1½ to 1¾ cents less for gasoline. This means that for each barrel of crude refiners are getting from 35 to 37 cents less on the gasoline yield.

Although refiners are realizing more on kerosene and heavier ends, these increased returns do not offset the loss on gasoline, and, in addition to this, crude is costing, basing figures on 36 gravity, approximately 30 cents more a barrel. Thus, it can be seen, that refiners are securing less on a barrel basis this year than last.

Refiners do not consider it likely that any great amount of gasoline will be offered at low prices by marketers the remainder of June as there was the last of May. So far as reported there is little gasoline in the hands of marketers and most of what there is was bought at prices above present market quotations.

The early part of the month, the outlook for the month was for higher prices and refiners were slow to make future sales except around 11½ cents. Previous to the export purchases a week ago, marketers were able to buy at lower prices but this material is not expected to compete seriously with refinery quotations, as any reduced prices by marketers to get business would mean losses.

Gasoline and Naphtha

Gasoline prices generally declined from an eighth to a quarter cent. Because the purchases were only in the higher gravities these grades had a slightly firmer touch than the other products, but even they were becoming more freely offered. The 64-66 375 product was quoted from 12¼ to 12½ cents by refiners but buyers were able to fill their needs under these quotations, establishing a market from 12⅛ to 12⅜ cents. The 60-62 400 material, the firmest in the Group, was offered only at 11¾ cents and up.

The U. S. Motor (58-60 437) gasoline was particularly inactive on the spot market, and as a result was free at 11¼ cents. Some efforts to buy under this were made but little material was moved so far as checked. Trends for the next 30 days were difficult to determine. One refiner reported to have sold some gasoline for July at 11½ cents but outside of this few such sales were reported. Several buyers were trying to place orders for July at 11¼ cents.

The 450 endpoint gasolines also were slow with quotations generally from an eighth to a quarter-cent under the U. S. Motor product. Naphtha, however, offered resistance to the general decline due to the scarcity of this product. Refiners reported being able to get as high as 11¼ cents, although offers of the 56-58 450 gasoline were made under that.

Natural Gasolines

Natural gasolines dropped off still further with prices Tuesday the lowest they have been at any time so far this year. There was very little demand and manufacturers were offering the A grades from 8½ to 8¾ cents; the B grades at 8¼ to 8½ cents and Grade C from 8 to 8¼ cents.

Kerosene and Distillates

Few calls for kerosene also forced sharp reductions in kerosene prices. One refiner cut his quotation a cent in one day. Kerosene was offered freely Tuesday at 6¾ cents on the 41-43 water white grade. The 42-44 product was slightly stronger at 7¼ cents but it was finding little demand.

Distillates were firm in price and there was little change in spot market conditions. Some discussion is being aroused over contracts for next season. The larger refiners so far have made no such contracts although inquiries from buyers are numerous. One refiner said he expected to begin making contracts next week. Distillate on the spot market is bringing from 4⅜ to 5⅝ cents and a few sales were made during the week at 4¾ cents.

Fuel Oil and Gas Oil

Fuel oils declined from 2½ to 5 cents a barrel. A marked weakening also was felt in the higher gravities and even the 28-30 grade was quoted from $1.30 to $1.35. The report that the Frisco railroad is abandoning oil burning locomotives on its freight trains is causing considerable discussion. This will throw a large amount of fuel on the spot market and probably will have an important bearing on price trends.

The 24-26 fuel was offered during the week from $1.20 to $1.22½ and the 22-26 grade at $1.20. A sale of a large quantity of the latter fuel over the next 30 days was reported by one refiner at $1.15.

Gas oil was available at 4 cents for cracking stock but was firm at this figure.

Lubricants

A good movement on lubricants was reported, especially bright stocks. One manufacturer said the demand had exhausted his supply of the latter stock. Another manufacturer reported the sale of more than 1,000,000 gallons of cylinder stocks during the week for future shipment. While generally improved a few products still are slightly unsettled in price, with wide ranges of quotations. The 200 viscosity 3 color neutral was quoted from 11¼ cents to as high as 12¼ cents. Prices generally were unchanged.

DRAIN ON CALIFORNIA STOCKS

LOS ANGELES, Calif., June 22.—Total fluid stocks held on the Pacific Coast May 31, declined 77,526 bbls. from the total on April 30.

The total production of crude oil in California in May was 18.667,144 bbls., or a daily average of 602,166 bbls. Production in April averaged 603,069 bbls. per day.

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Baroid possesses wonderful arching qualities. It contains barytes having a high specific gravity and so treated as to remain in suspension in oil or water.

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WARNING: The use of barytes (and also iron oxide) in the drilling, handling and operating of oil and gas wells is fully covered by the Stroud Patents. (United States Patent No. 1575-944).

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ST. LOUIS, MO.

NORTH CENTRAL TEXAS

(Continued from Page 40)

rate of 125 bbls. daily from sand at 861-73 feet, total depth 874 feet. Both wells are in Section 166, T. E. & L. Survey. Bridwell & Heydrick's No. 6 Beardon in the S. G. Hardaway Survey, A-136, swabbed 80 bbls. at 1,066-78 feet; No. 7 Beardon was dry and abandoned at 1,114 feet; No. 1 E. Rogers, Section 166, T. E. & L. Survey, was a failure and was plugged at 166 feet.

Bridwell & Mayfield's No. 8 Street, Section 2,444, T. E. & L. Survey, was good for 25 bbls. at 1,276-87 feet; No. 3 Allen & Williams made 4 bbls. at 627-30 feet, total depth 637 feet. Chenault & Lea's No. 2 Rachuig, in the NW of Section 4, B. B. B. & C. Survey, pumped 50 bbls. at 1,164-73 feet. Reed and others' No. 1 Jack, NW cor. Section 23, Young County School Land, was a 40-bbl. producer at 552-57 feet. Richardson & Barkley's No. 1 Dean was dry and abandoned at 556 feet. Roberts Oil Corp.'s No. 1 Gilmore, SW cor. Section 14, Young County School Land, A-1,284, was a failure at 654 feet. Sun Oil Co.'s No. 2 Deitrich pumped 127 bbls. at 1,168-70½ feet. The Texas Company's No. 10 Beardon, S. G. Hardaway Survey, A-136, swabbed 80 bbls. at 1,081-88 feet, total depth 1,093 feet. H. T. Wolf's No. 1 Brown, William Stoneham Survey, was dry and abandoned at 600 feet. Wolf and others' No. 1 Farrow, Section 1,369, T. E. & L. Survey, was a duster and plugged at 1,190 feet.

Dyer and others' No. 1 Costello Brothers was dry and abandoned at 2,850 feet and Hubbard Drilling Co.'s No. 1 Harrison was plugged at 2,869 feet.

Hall County

Hudspeth & Taylor's No. 1 T. R. Fuston was abandoned as dry at 1,635 feet.

Baylor County

Murchison & Fain's No. 1 Portwood "C" was a failure at 1,464 feet and abandoned.

Shackelford County

Amerada Petroleum Corp.'s No. 1 Cook, NE cor. SW, Section 85, Block 10, E. T. R. R. Survey, was plugged back from 1,360 feet to sand at 1,323-27 feet and completed as a 10-bbl. producer. It also has about 4,000,000 feet of gas. McCurdy and others' No. 1 Ledbetter, Section 658, T. E. & L. Survey, was dry and plugged at 805 feet. Roeser & Pendleton and Marland Oil Co.'s No. 12 Cook A-85 was completed flowing 500 bbls. at 1,308-24 feet. Roeser & Pendleton's No. 1 Cook B-84 flowed 800 bbls. at 1,337-61 feet and No. 8 Cook B-85 flowed 700 bbls. at 1,324-49 feet when completed.

Stephens County

Humble Oil & Refining Co.'s No. 7 Smith, Section 27, Block 4, T. & P. Survey, was good for 50 bbls. at 1,704-44 feet. Kleinfelder's No. 4 Grimes made 25 bbls. at 3,204-44 feet. Phillips Petroleum Co.'s No. 2 Akin was dry and abandoned at 3,270 feet. Texas Pacific Coal & Oil Co.'s No. 65 Binney was a 75-bbl. completion at 1,882-94 feet, total depth 1,899 feet and its No. 1 Hancock flowed 500 bbls. at 3,200-40 feet, total depth 3,245 feet. Gulf Production Co.'s No. 2 S. E. Beyer "A" pumped 75 bbls. in 22 hours at 3,349 feet, total depth, and was completed.

Palo Pinto County

Heath and others' No. 2 Wilbar, in the James Latham Survey, A-279, was dry and abandoned at 498 feet. Moore & Snebold's No. 1 Robinson in Section 53, Block 3 T. & P. Survey, was completed making 750,000 feet of gas at 1,418-36 feet. Hart's No. 2 Caldwell made 500,000 feet of gas at 3,826-40 feet.

Eastland County

Robert Oil Corp.'s No. 1 Knight, Section 65, Leagues 3 and 4, McLennan County School Land, was an abandoned location. Hoffer Oil Corp.'s No. 1 Hitson was dry and abandoned at 3,401 feet and L. Parnell abandoned the location for No. 1 Dill.

Callahan County

Canyon Oil & Gas Co.'s No. 3 Derrington in the W. G. Anderson Survey was good for 175 bbls. at 1,403-17 feet. Andrews Petroleum Corp.'s No. 1 Pippin was dry and abandoned at 2,475 feet. French & Lewis also abandoned their No. 1 Maddux, at 1,503 feet.

Mitchell County

California company's No. 5 Womack was good for 23 bbls. from sand at 2,940-3,083 feet, total depth 3,087 feet.

Coleman County

Burke-Greis Oil Co.'s No. 2 Dibrell in the Dibrell Pool, J. W. Hicks Survey No. 265, was a 150-bbl. well at 1,909-25 feet. Midwest Exploration Co.'s No. 1 Dibrell "B" was completed as a gasser making 12,000,000 feet at 1,852-60 feet, total depth 1,895 feet.

Howard Petroleum Co.'s No. 1 Stearns was a failure at 1,504 feet.

Brown County

Barbour Oil Co.'s No. 2 Newton in the N. B. Mitchell Survey No. 150, was dry and abandoned at 1,340 feet. Blair & Kell also completed a duster in their No. 5 Byrd, same survey, at 1,315 feet. J. S. Cosden's No. 2 Gaines was another failure at 1,310 feet and Haggard's No. 2 McDonough was abandoned as dry at 650 feet. Jake Hamon, Jr.'s, No. 1 Gaines in the William B. Travis Survey No. 148 was good for 25 bbls. at 1,353 feet, total depth, sand being at 1,334-50 feet. Humble Oil & Refining Co.'s No. 2 J. C. Kilgore "A," Section 3, J. Delgado Survey, made 25 bbls. at 1,187-93 feet, total depth 1,198 feet, and No. 3 J. C. Kilgore "A" made 30 bbls. from sand at 1,155-65 feet, total depth 1,167 feet. McLester Oil Co.'s No. 4 Clark in the J. P. Triplett Survey was a 50-bbl. well at 1,186-1,210 feet; No. 7 Clark made 80 bbls. at 1,180-1,207 feet. Milham corporation's No. 2 Edington was dry and abandoned at 1,400 feet. Phillips Petroleum Co.'s No. 3 Dunn, Section 12, Juan Delgado Survey No. 785, was making 60 bbls. at 1,150-68 feet, total depth 1,169 feet. Prairie Oil & Gas Co.'s No. 8 Chambers made 15 bbls. at 1,284-95 feet, total depth, 1,305 feet; No. 5 W. M. Wooldridge was dry and abandoned at 1,305 feet. The location for Richardson and others' No. 1 Crothers was abandoned. Schaffner & Wilson's No. 10 Prather in the William Miller Survey No. 149, was a 40-bbl. well at 1,278-1,310 feet. T. B. Slick's No. 1 DeBusk was dry and abandoned at 1,475 feet. Smith Oil Co.'s No. 13 Dunn made 60 bbls. at 1,128-39 feet.

In the southern part of the county, Andrade and others' No. 1 Conklin in the W. S. Armstrong Survey No. 41, was dry and abandoned at 1,504 feet. C. O. Moore's No. 1 Beal was also a failure at 1,268 feet, and Richardson and others' No. 2 Parks was another duster at 1,303 feet.

Reagan County

Big Lake Oil Co.'s No. 7-B University was dry and abandoned at 2,473 feet; No. 20-A was plugged as a failure at 2,455 feet, and No. 25-A was likewise abandoned at 2,480 feet.

Upton County

Dixie Oil Co.'s No. 3 Burleson, Section 100, Thomas C. Jones Survey, A-746, was flowing 82 bbls. when completed in sand at 2,206-34 feet. Hults and others' No. 1 Halff was dry and abandoned at 3,250 feet. Republic Production Co.'s No. 2 Baker pumped 20 bbls. at 2,190-2,252 feet. Tidal Oil Co.'s No. 1 Union Land Co. was dry and abandoned at 2,240 feet.

Ward County

Gulf Production Co.'s No. 1 Hutchings Stock Association was shot again but was not helped and is being abandoned at total depth of 4,787 feet.

Crockett County

Gulf Production Co.'s No. 2 L. P. Powell "A," Tract B, was completed for 60 bbls. on the pump at 2,699 feet.

Panhandle First Reports

Gray County

Humble Oil & Refining Co.'s No. 1 H. H. Merten, 330 feet north and west SE cor. of south 240 acres of north half Section 87, Block 3, I. & G. N. Survey; No. 1 Worley & Reynolds, 330 feet north and west SE cor. E half NE, Section 83, same block. Magnolia Petroleum Co.'s No. 1 Merten Brothers, 330 feet north and west SE cor. Section 82, Block 3, I. & G. N. Survey; No. 2 Merten Brothers, 330 feet south and 990 feet east NW cor. S half Section 82, Block 3; No. 3 Merten Brothers, 330 feet south and 1,650 feet east NW cor. S half same section; No. 4 Merten Brothers, 330 feet south and 2,310 feet east NW cor. S half, same section. Wilcox-Pampa Oil Co.'s No. 5 Worley & Reynolds, 330 feet north and east SW cor. NE, Section 62, Block 3; No. 6 Worley & Reynolds, 330 feet south and east NW cor. NE, SW, same section.

Hutchinson County

Prairie Oil & Gas Co.'s No. 4 J. F. Weatherly, 300 feet north and east SW cor. S half SW, Section 19, Block Y, M. & C. Survey; No. 5, 330 feet north and 990 feet east SW cor. S half SW; No. 6, 330 feet north and 1,650 feet east SW cor S half SW; No. 7, 330 feet north and 2,310 feet east SW cor. S half SW; No. 8, 990 feet north and 2,310 feet east SW cor. S half SW; No. 9, 990 feet north and 1,650 feet east SW cor. S half SW; No. 10, 990 feet north and east, SW cor. S half SW; No. 11, 990 feet north and 330 feet east SW cor. S half SW, all in Section 19, Block Y.

Delmar Oil Co.'s No. 2 Johnson, 330 feet south and west NE cor. NW NE, Section 20, Block Y, M. & C. Survey, cellar. Currie and others' No. 1 Smith, 330 feet south and east NW cor. NE, Section 10, Block Y, same survey, building rig. Marland Oil Co.'s No. 3-A Johnson, 330 feet north and east of SW cor. of S half NE, Section 20, Block Y, M. & C. Survey, building rig; No. 5-A Johnson, east offset to Phillips Petroleum Co. and Haines in Mary Whitley Survey, rig; No. 5 J. A. Whittenburg, 1,071 feet south and 333 feet east of NW cor. of south 120 acres, Section 65, Block 46, H. & T. C. Survey, rig; No. 2 J. F. Weatherly "B", 330 feet south and east NW cor. NW NE, Section 19, Block Y, building rig. S. D. McIlroy's No. 2 Smith, SW cor. SW NW, Section 14, Block Y, M. & C. Survey, building rig. Murchison & Fain's No. 1 Twitchell, 68½ feet from north and south lines and 400 feet from west line, Twitchell Survey, spudding; No. 2, midway between north and south lines and 400 feet from east line, same survey, building rig. Prairie Oil & Gas Co.'s No. 11 Johnson "A," 330 feet from north line and 990 feet from west line of 240 acres, Section 64, Block 46. Phillips Petroleum Co. and Coble Oil Co.'s No. 18 Whittenburg, 330 feet north and east SW cor. NE, Section 13, Block Y, M. & C. Survey, location. Phillips Petroleum Co.'s No. 3 Smith-Capers, SW cor. SW SE NE, Section 12, Blk. Y, M. & C. Survey, spudding. Sunburst Oil Co.'s No. 2 Smith, NW cor. NW SW, Section 14, Block Y, rig.

Roberts County

Gibson Oil Corp.'s No. 1 Jones, 330 feet north and east SW cor. SW SE, Section 109, Block C, G. & M. Survey, rig.

Hartley County

Humble Oil & Refining Co.'s No. 1 Shelton, C NW SE, Section 63, Brovo Subdivision, location. Milham Corp. of Texas' No. 1 E. S. Collins, Section 2, Block L. S., G. & M. Survey, cellar.

Wheeler County

Gibson Oil Corp.'s No. 1 Bentley, 330 feet south and east NW cor. SE, Section 42, Block 24, H. & G. N. Survey, rig. Upton Gas Co.'s No. 1 fee, C W half NW NE, Section 93, Block 17, spudded. Scott & Barner's No. 1 Jackson, SE SE NW, Section 11, Block 27, H. & G. N. Survey, rig.

First Reports

(Locations unless otherwise specified.)

Wichita County

Kiel, Chapman & Porter's No. 1 J. F. Kiel, 1,170 feet south and 150 feet west of most northerly NE cor. of J. F. Kiel's 759 acres, John Thomas Survey, A-283. O'Donohoe & Gates' No. 1 Burk & George, 1,620 feet south and 135 feet west NE cor. Section 23, Cowherd Brothers subdivision, drilling with rotary at 875 feet. W. B. Omohundro's No. 1 W. H. Chilson, 150 feet north and west SE cor. of east 20 acres of north 80 acres, Section 3, in west half Margaret Ramsey Survey, A-471. O. C. Somers and others' No. 1 Mrs. Lillis Morgan, 1,470 feet north and 810 feet east SW cor. of C. T. R. R. Survey No. 1, A-46. Block 41 Oil Co.'s No. 9 Kemp & Kempner, 1,200 feet north and 450 feet east SW cor. 80 acres in Block 41, Kemps Wichita Valley Lands; No. 10, 800 feet north and east SW cor. same 80 acres. J. W. Jooser's No. 3 H. B. Hines, 450 feet north and 150 feet west SE cor. north 40 acres of west 80 acres of H. B. Hines tract, Section 11, H. & G. N. Survey, A-147. Humble Oil & Refining Co.'s No. 6-A H. B. Hines, 1,450 feet north and 150 feet west SE cor. 200 acres, Section 11, H. & G. N. Survey, A-147, spudding new hole. Magnolia Petroleum Co.'s No. 4 Watkins-Cullum, 742 feet north and 150 feet west SE cor. 38-acre lease, H. B. Balch Survey, A-12; No. 7 Watkins-Cullum, 150 feet north and 200 feet west SE cor. same lease; No. 8, 500 feet north and 150 feet west SE cor. of south 38 acres of north 138 acres of J. A. Watkins' 278 acres, same survey; No. 2 Bertha Ramming, 1,250 feet south and 150 feet east NW cor. of east 143 acres of R. and B. Ramming 350 acres and located in Section 4, T. T. R. R. Survey, A-656. T. F. Pyle and others' No. 2 W. W. Overby, 1,842 feet north and 450 feet east SW cor. John M. Sharp Survey, A-262. Skelly Oil Co.'s No. 4 Bertha Ramming, 500 feet north and 200 feet east SW cor its 30-acre lease and located in Section 1, H. T. & B. Survey, A-124; No. 5 Bertha Ramming, 200 feet north and east SW cor. 30 acres, Section 1, H. T. & B. Survey, A-124; No. 6 B. Ramming, 800 feet north and 200 feet east SW cor. same 30-acre lease; No. 12 C. Ramming, 150 feet south and 1,500 feet east NW cor. 110-acre lease, Section 1; No. 13 R. Ramming, 150 feet south and 1,800 feet east NW cor. same section. E. J. Stump & Co.'s No. 2 J. L. and T. J. Waggoner, 1,000 feet south and 450 feet east NW cor. of east 40 acres of west 80 acres of north 113 acres of middle 160 acres of north half Section 8, G. H. & H. Survey, A-748. United Production Co.'s No. 6 Grace Jennings "A," 500 feet north and 100 feet west SE cor. west half NE NE, Section 12, H. T. & B. Survey, A-473, rigging up rotary. Virginia Oil Association's No. 25 T. L. Burnett, 150 feet south and 250 feet east NW cor. J. F. Torrey & Co. Survey No. 2, A-787, drilling at 100 feet with rotary. A. T. Wolfe's No. 4 E. Daume, 1,775 feet south and 1,500 feet west NE cor. Section 1, S. P. R. R. Survey, A-266, being 423 feet south and 228 feet west of most easterly NE cor. of his 125 acres.

Wilbarger County

Empire Gas & Fuel Co.'s No. 45 W. H. Stephens, 500 feet north and 150 feet west SE cor. NE NE, Section 83, Block 14, H. & T. C. Survey, drilling at 565 feet, rotary; No. 46 Stephens, 185 feet south and 451 feet east NW cor. south half SW NE, same section. Humble Oil & Refining Co.'s No. 6 W. T. Waggoner "K," 150 feet south and 215 feet west NE cor. Section 46, Block 2, H. & T. C. Survey; No. 10 W. T. Waggoner "O," 750 feet north and 450 feet west of SE cor. "O" lease, Section 47; No. 11 Waggoner "O," 450 feet north and 150 feet east SW cor. "O" lease; No. 1 W. T. Waggoner "P," 1,470 feet north and 2,490 feet east SW cor. Section 47, Block 4, being SE cor. of lease. Phillips Petroleum Co.'s No. 7 W. T. Waggoner "H," 220 feet south and east NW cor. SE SW, Section 46, Block 4, H. & T. C. Survey; No. 5 W. T. Waggoner "L," 220 feet south and 590 feet west NE cor. SE SE, Section 45, rig; No. 4 W. T. Waggoner "Q," 200 feet north and 170 feet west SE cor. Section 47, Block 4; No. 2 Waggoner "R," SW cor. Section 45, Block 4; No. 4 Waggoner "T," 660 feet south and 180 feet east NW cor. Section 44, Block 4, rig; No. 5 Waggoner "T," 450 feet south and 160 feet east NW cor. Section 44, rig; No. 3 Waggoner "Y," 220 feet north and 660 feet west SE cor. NW, Section 43; No. 10 W. T. Waggoner "QQ," 150 feet north and 1,571 feet east SW cor. lease, Section 47; No. 11 Waggoner "QQ," 150 feet north and 1,950 feet east SW cor. lease, same section; No. 2 W. T. Waggoner "UU," NW cor. 10-acre "UU" lease, Section 42, Block 4; No. 3 Waggoner "UU,"

155 feet south and 600 feet east NW cor. same lease.

Baylor County

Brit Cranfill and others' No. 6 W. B. Mills, 450 feet south and 150 feet west NE cor. south half Section 2,413, T. E. & L. Survey, A-464. J. W. Hooser's No. 14 W. B. Mills, 450 feet south and 770 feet west NE cor. SE, Section 2,428, T. E. & L. Survey, A-467. Murchison & Fain's No. 1 W. H. Portwood "C," 150 feet north and 750 feet east SW cor. NW, Section 2,412, T. E. & L. Survey, A-463, dry and abandoned at 1,464 feet.

Archer County

Barnsdall Oil Corp.'s No. 1 S. G. Helm, NW cor. Lot 226, Section 9, Palo Pinto County School Lands, A-339. B. F. Caldwell and Consolidated Oil Co.'s No. 4 W. T. Hutcheson, NW cor. Lot 13, Power Subdivision, Section 123, A. T. N. C. L. Survey, spudded. Consolidated Oil Co.'s No. 1 G. T. Netherton, NW cor. SW NE, Section 92, A. T. N. C. L. Survey, drilling at 400 feet. Marland Oil Co. and Trahan's No. 1 L. F. Wilson, SE cor. west half SW NE. C. Spaulding Survey, A-388, fishing at 1,340 feet. McCarty Oil Co.'s No. 1 Parrish Brothers, SE cor. Lot 2, Geraldine Subdivision, J. T. Tucker Survey, A-1,113; No. 30 L. F. Wilson "B," 1,080 feet south and 150 feet west NE cor. west half north 160 acres E. Hall Survey, A-682, drilling at 600 feet. Murchison & Fain's No. 1 L. F. Wilson "F," 450 feet north and 150 feet east SW cor. Lot 39, Geraldine Subdivision. Murchison & Fain and Payne's No. 1 Sarah E. Finch, 660 feet south and 150 feet east NW cor. Lot 14, Section 98, A. T. N. C. L. Survey. Shappell Oil Co.'s No. 5 L. F. Wilson "A," 450 feet north and 150 feet west SE cor. Lot 13, Section 25, A. T. N. C. L. Survey, drilling at 700 feet. Simms Oil Co.'s No. 2 J. H. Turbeville "A." 300 feet south and 1,448 feet west NE cor. of north 100 acres Robert Carson Survey No. 172, A-106. Rayzor & Seaberry's No. 2 George Parrish, 150 feet north and west SE cor. Lot 9, Section 98, A. T. N. C. L. Survey.

Cook & Reeder's No. 1 A. M. Kunkel, SW cor. SE SE, Section 3, B. B. B. & C. Survey, A-51, rigging up rotary. Continental Oil Co.'s No. 8 J. F. Rogers, 477 feet north and 750 feet west SE cor. north 35 acres of south 60 acres of west 120 acres of north 160 acres of Section 2,407, T. E. & L. Survey, drilling at 861 feet. Maer & Staniforth's No. 5 G. P. Meade Estate, 600 feet north and 450 feet west SE cor. Section 40, G. P. Meade Subdivision of "LM" pasture. Magnolia Petroleum Co.'s No. 23 A. J. Lowe, 150 feet north and 450 feet west SE cor. Lot 2, Crawford Subdivision of I. Holman Survey, A-162; No. 8 J. F. Rogers "B," 450 feet north and 150 feet west SE cor. east 66 acres of NW, Section 2,406, T. E. & L. Survey. Long and others' No. 1 D. M. and C. S. Harris, 1,475 feet north and 890 feet east SW cor. Section 77, Harris Club Ranch Subdivision. Pandem Oil Corp.'s No. 1 W. H. Thomas "D," 150 feet south and 648 feet west NE cor. south 50 acres Lot 5, North Subdivision of Nathan Thomas Survey, A-454, drilling at 200 feet. Prairie Oil & Gas Co.'s No. 1 W. H. Thomas, SW cor. of north 50 acres of Lot 4, North Subdivision, same survey. Shasta Oil Co. and others' No. 3 G. P. Meade Estate "A," 150 feet north and 450 feet east SW cor. Section 39, G. P. Meade Subdivision of LM" pasture; No. 6 G. P. Meade Estate "A," 750 feet north and 150 feet east SW cor. same section.

Clay County

Simms Oil Co.'s No. 1 R. M. Waggoner, 4,110 feet south and 1,470 feet west NE cor. west half K. McKensie Survey, A-328.

Montague County

Empire Gas & Fuel Co.'s No. 1 J. W. Maddox, NW cor. of east 30 acres of north 114 acres of south 228 acres of J. W. Maddox 334 acres in John Chambliss Survey, A-123. F. H. E. Oil Co.'s No. 1 J. W. Maddox, NW cor. of west 20 acres of east 50 acres of north 114 acres of south 228 acres of J. W. Maddox 334 acres, same survey. Gracey & Kahle's No. 1 J. W. Maddox, 200 feet south and west NE cor. of south 20 acres of west 50 acres of south 100 acres of J. W. Maddox 191 acres, same survey. Humble Oil & Refining Co.'s No. 9 Robert Hinds, 796 feet south and 529 feet west NE cor. 40-acre lease, J. J. Wall Survey, A-1,199, drilling at 80 feet. Lesh, McCall & Kilcrease's No. 5 R. Hinds, 150 feet south and 550 feet west NE cor. 20-acre lease, J. J. Wall Survey, A-1,199, rigging up rotary. Pure Oil Co.'s No. 1 J. W. Maddox "B," NW cor. Lot 4, Cyrus W. Thompson Survey, A-741, rig. Rycade Oil Corp.'s No. 2 R. W. Cunningham, 150 feet south and 450 feet west NE cor. east 50 acres, west 129 acres of 325-acre tract, G. Bayne Survey, A-15, drilling at 200 feet; No. 3 R. W. Cunningham, 150 feet south and 750 feet west NE cor. 50 acres, G. Bayne Survey, rig; No. 4, 150 feet south and 207 feet east NW cor. same 50 acres, drilling at 340 feet. The Texas Company's No. 1 E. J. Bouldin, 645 feet north and 674 feet east SW cor. west 80 acres of 200-acre tract, John Chambliss Survey, A-123, rig; No. 10 I. A. Gist "A," 1,747 feet south and 150 feet west NW cor. of J. J. Wall Survey, A-1,199, and located in I. A. Gist 484 acres in William Donoho Survey, A-178, drilling at 640 feet; No. 2 H. C. Gist "B," 1,800 feet north and 200 feet west SE cor. of 186 acres William Donoho Survey, A-178; No. 1 J. W. Maddox "C," 200 feet north and east SW cor. of east 80 acres of north 120 acres of J. W. Maddox 334 acres, John Chambliss Survey, A-123. The Texhoma Oil & Refining Co. and Republic Production Co.'s No. 3 J. W. Rowland and others, SE cor. 30-acre tract in John Chambliss Survey, rig.

Jack County

Cocklin and others' No. 1 C. V. Bailey, NE cor. of W. H. Little Survey, A-1,401. W. M. Edington's No. 1 John Barry, SW cor. of west 40 acres of John Barry's 126 acres, R. Parker Survey, A-461. Guthrie and others' No. 2 Mrs. M. D. Snedeker, 150 feet south and 450 feet west NE cor. of west 40 acres of south 80 acres of north 332 acres of Mrs. Snedeker's 415 acres, J. Robbins Survey, A-490. Murchison & Fain's No. 1 S. M. Jones Estate, 5,430 feet north and 150 feet east SW cor. Matthew Mabin Survey, A-413, drilling at 700 feet. Hill & Rutter's No. 1 C. C. Bloodsworth, center of Section 3,317, T. E. & L. Survey. Meeks & Foster's No. 1 James Ellis and others, 450 feet north and east of most southerly SE cor. W. Berryman Survey, A-40, and located in J. W. Williams Survey, A-877, drilling at 320 feet.

Young County

Atlantic Oil Producing Co.'s No. 5 Rachuig "B," 750 feet south and 150 feet west NE cor. 50 acres in NW of Survey 4, B. B. B. & C. Survey, A-1,838. Chenault & Lea's No. 3 R. H. Rachuig, 750 feet south and 150 east NW cor. 20 acres in NW of Survey 4, Bridwell & Heydrick's No. 8-A Beardon, 1,050 feet south and 482 feet west NE cor. of 51-acre lease, S. G. Hardaway Survey, A-136, rigging up rotary. Barnes and others' No. 1 W. F. Brown, 4,140 feet south and 4,030 feet east NW cor. S. Tynes Survey, A-274, drilling at 400 feet. Cosden-Consolidated Oil Co.'s No. 8 S. M. J. Benson, 450 feet south and 900 feet west NE cor. of Section 1,391, T. E. & L. Survey, rigging up rotary. Evans and others' No. 1 J. P. Logan, NE cor. SE, Section 24, Young County School Land, A-1,284. Foster and others' No. 1 F. E. Wilton, 4,750 feet north and 3,550 feet west SE cor. S. Tynes Survey, A-274, fishing at 310 feet. Hunt & Sigler's No. 1 E. R. Prideaux, 1,650 feet north and 1,350 feet west SE cor. of 163-acre tract S. Tynes Survey, A-274. Kennedy and others' No. 1 H. W. Drum, SE cor. of H. W. Drum's 125 acres in S. Tynes Survey, A-274. Pace Drilling Co.'s No. 3 A. A. Bernhardt, 1,650 feet south and 750 feet west NE cor. of Section 238, T. E. & L. Survey, rig. Shaw & Rathke's No. 1 M. A. Stewart, SW cor. SE, Section 27, Young County School Land, A-1,284; No. 3 M. A. Stewart, 150 feet north and 450 feet west SE cor. SE, same section; No. 1 H. O. Prideaux "B," 675 feet south and 150 feet west NE cor. of east 40 acres of H. O. Prideaux 284 acres in A. Rohus Survey, A-240, drilling at 175 feet. Stafford & Hayes' No. 2 F. C. Dailey, 4,140 feet south and 4,630 feet east of NW cor. of S. Tynes Survey, A-274, being 150 feet south and 450 feet east of NW cor. of south 57 acres of F. C. Dailey's 97 acres, rigging up machine.

Shackelford County

Reclamation Oil Co.'s No. 1 E. A. Jeter, 150 feet south and 450 feet west of NE cor. SE, Section 14, Block 11, T. & P. Survey, spudded. Roeser & Pendleton and Marland Oil Co.'s No. 11 W. I. Cook, A-84, 506 feet north and 150 feet west SE cor. SW SE, Section 84, Block 10, E. T. R. R. Survey; No. 12 Cook A-84, 860 feet north and 150 feet west SE cor. SW SE, rig; No. 13 Cook A-85, 150 feet south and 700 feet west NE cor. SW NE, Section 85; No. 14 Cook A-85, 150 feet north and 700 feet west SE cor. NW NE, same section; Roeser & Pendleton's No. 3 Cook B-84, 500 feet north and 150 feet east SW cor. SE SE, Section 84; No. 4 Cook B-84, 860 feet north and 150 feet east SW cor. SE SE, same section, rig; No. 5 Cook B-85, 660 feet south and east NW cor. SE SE, Section 85, drilling at 850 feet; No. 9 Cook B-85, 660 feet south and west NE cor. NE NE, Section 85; No. 1 Cook A-90, 660 feet south and west NE cor. SE NE, Section 90, Block 10, E. T. R. R. Survey.

Stephens County

Phillips Petroleum Co.'s No. 2 O. L. Moon, 980 feet north and 930 feet east SW cor. east half Section 1,052, T. E. & L. Survey, rig. Hucony Gas Co.'s No. 1 J. M. McPherson, 200 feet south and 800 feet east NW cor. of south 100 acres of north 200 acres, Section 1, Orphan Asylum Land. Mook-Texas Oil Co.'s No. 5 L. D. Head, 1,400 feet south and 150 feet west of NE cor. NW, Section 31, Block 6, T. & P. Survey. Phillips Petroleum Co.'s No. 4 R. M. Akin, 400 feet north and east SW cor. Section 2,028, T. E. & L. Survey, drilling at 330 feet. States Oil Corp.'s No. 4 C. E. Sikes, 990 feet north and 330 feet west SE cor. Section 84, Block 6, T. & P. Survey, drilling at 600 feet.

Eastland County

Shinholt & Heslip's No. 1 W. U. Fox, SW cor. SE 5 acres (square) in Section 67, Leagues 3 and 4, McLennan County School Land, building rig. Poteet Oil Syndicate's No. 1 S. A. Davis, 1,300 feet north and 1,500 feet west SE cor. north half Section 54, Block 4, H. & T. C. Survey.

Callahan County

Borealis Oil Co.'s No. 1 E. L. Finley, 1,150 feet north and 650 feet east SW cor. east half Section 10, Deaf and Dumb Asylum Land. Prairie Oil & Gas Co.'s No. 9 J. B. McDonough, 150 feet north and 850 feet west SE cor. J. B. McDonough's 103 acres, James Knight Survey, No. 10 J. B. McDonough, SW cor. same 103 acres, drilling at 850 feet.

Howard County

Joe Edgar and others' No. 1 John Roberts, NW cor. SE, Section 111, Block 29, W. & N. W. R. R. Survey.

Brown County

Barkley & Conway's No. 2 W. W. Allen, 200 feet south and west NE cor. west half Section 8, Juan Delgado Survey No. 785, drilling at 580 feet. Humble Oil & Refining Co.'s No. 5 E. L. Stover, 200 feet south and 700 feet east NW cor. Section 4, same survey, drilling at 185 feet; No. 3 E. P. and W. H. Kilgore "B," SW cor. of east 20 acres of 50-acre tract, Thomas Benson Survey No. 783; No. 4 J. C. Kilgore "B," NW cor. Section 3, Juan Delgado Survey No. 785; No. 1 E. P. and W. H. Kilgore "C," SE cor. of west 30 acres of 50-acre tract, Thomas Benson Survey No. 783; No. 2 E. P. and W. H. Kilgore "C," NE cor. of same 30 acres. J. E. McKenna's No. 1 J. I. Foster, SE cor. of west 40 acres of east 84 acres of J. I. Foster's 110-acre tract, same survey, machine. Humble Oil & Refining Co.'s No. 4 J. T. Hodnett, 200 feet north and 2,219 feet east of SW cor. of 400-acre tract in J. M. Harris Survey No. 784, moving in material. Phillips Petroleum Co.'s No. 5 T. L. Dunn, 150 feet south and 1,404 feet west of NE cor. of south 80 acres of Section 12, Juan Delgado Survey No. 785, machine. J. K. Hughes Development Co.'s No. 13 J. T. Arledge, 450 feet north and 1,050 feet east of SW cor. J. T. Arledge 190 acres in N. B. Mitchell Survey No. 150, rigging up. Schaffner & Wilson's No. 11 W. A. Prather, 1,050 feet south and 500 feet east of NW cor. east half W. A. Prather's 107 acres in William Miller Survey No. 149, rig. E. L. Smith Oil Co.'s No. 2 Graham Estate, 3,300 feet south and 2,050 feet east of NW cor. Section 7, J. Brown Survey No. 137, drilling at 275 feet. Ingleright and others' No. 4 L. V. Edington, 900 feet south and 1,620 feet west of NW cor. of Robert Mitchell Survey No. 141, and located in R. S. Milliken Survey No. 142. Mahlstedt Oil Co.'s No. 2 L. V. Eddington, 1,650 feet south and 1,400 feet west of NW cor. of Robert Mitchell Survey No. 141, and also located in the R. S. Milliken Survey No. 142, being 150 feet south and east of NW cor. their lease, drilling at 200 feet. Phillips Petroleum Co.'s No. 3 J. H. Prather, 150 feet north and 450 feet west of SE cor. south half J. H. Prather's 320 acres in William L. Swain Survey No. 145, rig. R. G. Gillespie Estate's No. 4 J. P. Newton, 150 feet south and 600 feet west of NE cor. of J. P. Newton's 322 acres in William L. Swain Survey No. 145; No. 5 J. P. Newton, 150 feet south and 1,150 feet west of NE cor. same 322 acres; No. 6 J. P. Newton, 150 feet south and 1,550 feet west of NE cor. same tract, rigging up. McLester Oil Co.'s No. 5 W. M. Wooldridge, 1,450 feet south and 750 feet west NE cor. of 320-acre tract E. T. R. R. Survey No. 157, being 1,450 feet south and 150 feet east of most northerly NE cor. of their 90-acre lease, rig. J. K. Hughes Development Co.'s No. 2 J. H. Keller, 150 feet south and 750 feet west of NE cor. of south 99.5 acres of J. H. Keller's 180 acres in Robert Mitchell Survey No. 141, spudding. Dozier & Bowers' No. 1 Mrs. M. J. Suttles, 200 feet south and 1,300 feet west of NE cor. of south 314 acres of Mrs. M. J. Suttles' 960 acres in Robert Mitchell Survey No. 140, drilling at 400 feet. Empire Gas & Fuel Co.'s No. 1 J. J. Smith, 200 feet north and east of SW cor. of Section 83, H. T. & B. Survey, A-450, moving in rig. Lightfoot and others' No. 1 J. D. Smith, 1,170 feet south and 150 feet east of NW cor. Lot 76, A. D. Neill Survey, drilling at 840 feet.

Upton County

Humble Oil & Refining Co.'s No. 1 R. Ricker, 330 feet south of north cor. of Mary S. Denton Survey No. 5, A-127, building rig. M. D. Bryant and others' No. 1 Mrs. M. L. Baker, 150 feet southwest of northeast line and northwest of southeast line of southwest 7.5 acres of SE SE, Section 7, Mary S. Denton Survey, A-789. Republic Production Co.'s No. 3 Mrs. M. L. Baker, 330 feet southeast of northwest line and southwest of northeast line of E. C. Grooms Survey No. 8, A-790, building rig.

Crockett County

J. K. Hughes' No. 3 J. P. Powell "A," 810 feet north and 250 feet east of SW cor. of north 32.5 acres of east 130 acres of L. P. Powell's 1,680 acres in Section 2, Block BB-2, A-5,480. Gulf Production Co.'s No. 4 L. P. Powell "A," 910 feet north and 230 feet east of SW cor. 160 acres in west half of Section 63, Block BB, G. C. & S. F. Survey, building rig; No. 5, 330 feet south and 910 feet east of NW cor. same 160 acres, building rig.

Foard County

Gulf Production Co.'s No. 1 A. T. Miller, 2,640 feet south and west NE cor. Section 32, Block 8, H. & T. C. Survey, building rig.

WHEELER CO. FOLLOWS GRAY INTO PANHANDLE

(Continued from Page 40)

swabbing 500 bbls. daily early this week. The Canyon Oil & Gas Co.'s No. 3 Whittenburg, in Section 12, Block Y, which on May 25 was flowing 274 bbls. hourly, 37 degrees gravity oil with 3 per cent

XUM

b. s. content, has paraffined up and is cleaning out.

Watched With Interest

One of the wells watched with great interest during the past week is the Bear Creek Oil Co.'s No. 1 E. E. Watkins, in the SW cor. of Section 10, Block M-21, northeast of production on the south side of the Canadian River. It was drilled to 2,968 feet in sandy lime and after standing over night bailed 7 bbls. of oil. Preparations were being made Monday to drill it deeper.

The Dixon Creek Oil Co.'s No. 29 Smith in Section 5, Block Y, which was reported last week as shut down for shot and making 90 bbls., was shot with 180 quarts at 2,855-2,900 feet and made 600 bbls. The same company's No. 21 Smith in Section 12, Block Y, was also shot with 220 quarts at 2,783-2,839 feet and responded with 650 bbls. initial. The Roxana Petroleum Corp.'s No. 1 Smith "B," in Section 11, Block Y, bridged after a 300-quart shot at 2,839-84 feet and was being cleaned out. The Double 5 Oil Co.'s No. 1 E. Cockrell, Section 2, Block Y, was flowing 300 bbls. following a shot of 125 quarts at 2,963-3,053 feet.

North of the Canadian River, two tests are being watched with more than passing interest. The Douglas Oil Co.'s No. 1-B Whittenburg, Section 15, Block X02, topped the pay at 3,040 feet and was drilling ahead at latest report at 3,060 feet with 600 feet of oil in the hole. This well's elevation is 3,132 feet. The Gulf Production Co.'s No. 9 Dial in Section 34, Block 18, swabbed 35 bbls. at total depth of 3,093 feet.

Panhandle First Reports

Carson County

The Republic Production Co.'s No. 1 Garner, 330 feet south and east, NW cor. Section 103, Block 4, I. & G. N. Survey.

Gray County

The Humble Oil & Refining Co.'s No. 1 Osborne, 330 feet south and west NE cor. E half NE, Section 86, Block 3, L. & G. N. Survey; No. 1 Merten, 330 feet north and west SE cor. south 240 acres N half Section 87, Block 3; No. 2 Merten, 990 feet south and 330 feet west NE cor. NE, same section. The McMan Oil & Gas Co.'s No. 1 Worley & Reynolds, 330 feet north and east, SW cor. NE, Section 83; No. 1 Merten, 330 feet south and west, NE cor. north 80 acres of N half Section 87. The Shamrock Oil Co.'s (formerly Clark & Baldridge) No. 2 Merten Bros., 330 feet north and west, SE cor. NW, Section 82; No. 3, 330 feet north and east, SW cor. NW, same section; No. 2 Worley & Reynolds, 330 feet south and west, NE cor. NW, same section. The Empire Gas & Fuel Co.'s No. 1, Mrs. P. A. Worley, 330 feet north and east SW cor. SE Section 63. The Gulf Production Co.'s No. 1, in the SE cor. Section 88, 330 feet from the lines; No. 1 Holmes, 330 feet south and west, NE cor. W half, SE, Section 87; No. 1 Worley & Reynolds, 330 feet south and east, NW cor. SE, Section 83; No. 2, NE cor. SE; and No. 3, SE cor. SE, same section. All of the foregoing are in the Wilcox-Pampa Pool, the total of new locations in that area since the recent completions of the big well and the Clark & Baldridge producer amounting to 22.

In the district near the western line of the county, between Pampa and Kings Mill, Young and others have a location for No. 1 Holmes, 330 feet north and west SE cor. NE, Section 106, Block 3, I. & G. N. Survey. The Empire Gas & Fuel Co.'s No. 1 Wall, 330 feet north and east, SW cor. SE NW, Section 161, Block 3, and No. 1 Hughey, SE cor. SW SW, Section 129, Block 3. They evidently think there is another pool in the vicinity of the Healthholt well similar to the Wilcox-Pampa Pool, which yielded only stripper wells in the first five attempts.

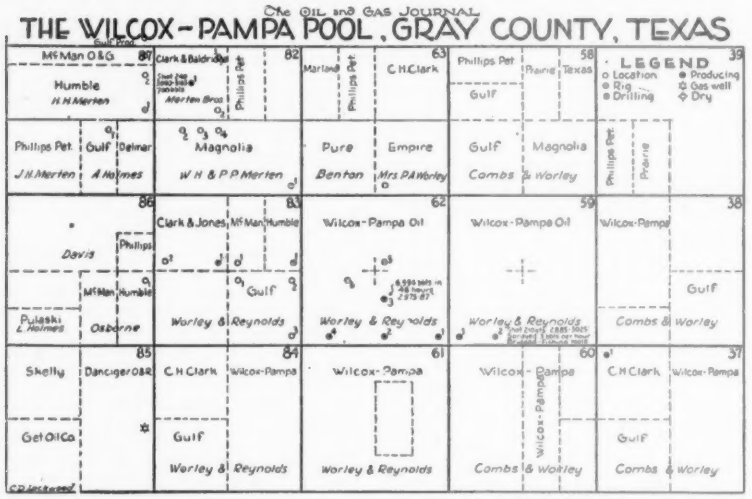
Hartley County

Eslick's No. 1, 330 feet each way from SW cor. NE, Section 13, Block 13. J. E. McKanna's No. 1 Collins, C SW, Section 3, LS Subdivision, rig on ground. J. E. McKanna's No. 1 Shelton, Lot 29, League 202, Capitol Land tract, rig on ground; No. 1 Capitol Lands, SW Section 22, C. S. & S. Survey, rig on ground.

Hutchinson County

The Alaska Oil Co.'s No. 1 Cockrell, NW cor. Section 2, Block B-3, D. & S. E. Survey, building rig. Cockrell-McElroy's No. 3 Smith, 990 feet south and 330 feet west NE cor. E half SW, Section 14, Block Y, M. & C. Survey, cellar; No. 4 Smith, 990 feet south and 330 feet east, NW cor. E half SW, same survey, cellar. Currie & Phillips' No. 3 Smith, 990 feet south and 330 feet W NE cor. SE, Section 14, Block Y, rig on ground. The Echo Oil Co.'s No. 4 Smith, CWL, N half SE NE, Section 11, Block Y, rig. The Empire Gas & Fuel Co.'s No. 4 Weatherly, SE NE NE, Section 19, Block Y, cellar; No. 5 Weatherly, NE SE NE, same section, rig on ground. The Goldeline Oil Co.'s No. 1 Whittenburg, 330 feet south and east NW cor. NE, Section 89, Block Z (offsets Amerada No. 4 to east) rig on ground.

The Gulf Production Co.'s No. 2 Ellis Cockrell, 990 feet from north line and 330 feet from west line of south 320 acres Section 3, Block Y, M. & C. Survey, moving in rig; No. 3 E. Cockrell, 1,648 feet south and 330 feet east NW cor. of Gulf's 320 acres in Section 3, moving in rig; No. 4 E. Cockrell, 305 feet north and 366 feet east SW cor of same 320-acre lease, also moving in rig; No. 1 J. M. Sandford, 330 feet north and west SE cor. of Gulf's 320-acre lease in Section 75, Block 46, H. & T. C. Survey, location; No. 16 C. L. Dial and others, (corrected location) 178 feet north and east SW cor. Section 1, Block 1, moving in rig; No. 17 Dial, 330 feet south and east, NW cor. Section 25, Block 47, moving in rig; No. 18 Dial, 306 feet south and 996 feet east NW cor. Section 25, Block 47, moving in rig; No. 19 Dial, 306 feet south and 1,693 feet east NW cor. same section, building road to location; No. 20 Dial, 250 feet south and west, NE cor. same section, also building road; No. 22 Dial, 330 feet south and east of SE cor. N half Section 1, Block X02, and located in Section 1, Block 1, H. & G. N. Survey, cellar; No. 23 Dial, location has been authorized but not yet surveyed.



The Phillips Petroleum Co.'s No. 1 Johnson-Cruso, 330 feet each way from SW cor. of west 50 acres of south 80 of north 320 acres, Section 69, Block 46, H. & T. C. Survey; No. 1 Johnson-Edson, NE cor. of south 80 of north 320 acres of Section 66, Block 46, H. & T. C. Survey; No. 1 Johnson-Easter, NW cor. of south 40 acres of Section 69, Block 46, H. & T. C. Survey; No. 2 Whittenburg-Elra, 330 feet north and east of NW cor. Section 21, Block A. & B., M & C. Survey, offsetting Prairie's No. 14 to north, cellar; No. 3, a north offset to Gibson Oil Corp.'s No. 1, in Section 28. The Phillips Petroleum Co.'s No. 2 Gordon-Johnson, NW cor. N half NE, Section 21, Block Y, A. & B. Survey; No. 3, SE cor. N half NE, same section. The Phillips Petroleum Co. and Gibson Oil Corp.'s No. 2 Whittenburg, C Lot 24, Caperton & Williams subdivision of Mary Whitley Survey; No. 3, C Lot 25, same subdivision; No. 4, C Lot 2, same subdivision, offsetting Gulf Production Co.'s No. 6-E. The Phillips Petroleum Co. and Patton's No. 2 Whittenburg, SW cor. of 160-acre tract in Mary Whitley Survey, south of Section 65, Block 46, H. & T. C. Survey, cellar; No. 3, NW cor. same tract; No. 4, NE cor. same tract, being a south offset to Marland Oil Co.'s No. 2; No. 5, 330 feet south and east of SW cor., Section 64, Block 46, H. & T. C. Survey, cellar. Phillips Petroleum Co.'s No. 1 Ray-Whittenburg, NW cor. of south 80 acres of north 320 acres, Section 65, Block 46, being a SE offset to McMan Oil & Gas Co.'s well in Section 66. The Phillips Petroleum Co.'s No. 1 Wiley-Johnson, SE cor. of south 80 acres of north 240 acres, Section 70, Block 46, being a north offset to the Midwest Exploration Co.'s tract. The White Eagle Oil & Refining Co.'s No. 1 Hedcoke, 178 feet from north and south lines and 660 feet from east line of Survey N of Section 25, Block 47, H. & T. C. Survey.

President W. C. Teagle Says Oil Industry Is On Sounder Basis

"The oil industry is on a sounder, more stabilized basis because the attitude of the oil man has changed the past two or three years. He is now seriously considering his business from an economic standpoint, and as a result, he is more prosperous," said Walter C. Teagle, president of the Standard Oil Co. of New Jersey, in the offices of the Carter Oil Co. at Tulsa Saturday.

President Teagle, with S. B. Hunt and E. M. Clark of New York City, vice president of the New Jersey company, and Richardson Pratt, New York financier, have just closed an inspection trip through the Louisiana, Arkansas, Mid-Continent, Gulf Coast and Rocky Mountain oil fields.

"The oil business as a whole looks bright," Mr. Teagle said, "but, I want it understood that I am no prophet. In no other business can conditions change overnight as in the oil business.

"Lubricating oil is one petroleum product that is absolutely essential to civilization's progress. There is no substitute; and for that reason, crude should not be wasted by selling it as fuel in competition with coal. Coal would not be worth a cent to modern industry if we did not have lubricating oils to oil and grease the machinery with.

"More and more fuel oil should be, and will be, cracked and less sold. While crude production in the Mid-Continent remains practically the same this year as last, gasoline consumption is 19 per cent higher now than it was a year ago. While crude oil prices are approximately 25 cents a barrel higher than they were in 1925, speaking generally, drilling operations in all parts of the country have increased but slightly."

Mr. Teagle sees no menace in either the new Amarillo Field in the Texas Panhandle nor the Venezuela oil pools. The Panhandle Field covers a vast amount of territory, he observed. It is bound to produce a lot of oil—but it is going to be a "spotty" field. "There will be gushers brought in here and very small wells there—no estimate of its potential production can possibly be made.

That the New Mexico oil fields are only in their infancy, is Mr. Teagle's opinion after a brief visit. "I am qute interested in the Lea County wildcat of the Maljamar Oil Co., however," he stated, "and am only hoping they do not blow it all to pieces with their 1,200-quart shot of gelatin."

Mr. Teagle said that shipments from Colombia would start July 1 and about 30,000 bbls. a day would be taken from that republic to the Atlantic Coast refineries. He said that Venezuela and Colombia would undoubtedly take the place of Mexico as that state was declining in oil production. Any foreign oil production, he said, would have a bearing on the general crude structure, but as Mexico was way down and domestic output not alarming, there would be nothing so far to be worried about.

ASK ROYALTY REDUCED FAR FROM RAILROAD

WASHINGTON, D. C., June 19.—A public hearing on a petition for an adjustment downward of oil royalties on oil and gas permits issued by the Government in San Juan County, Utah, has been held at the Interior Department.

The petition was made by the holders of oil and gas permits on public lands in that county, who claim they are 185 miles from a railroad and are unable to pay the same royalty as producers on public lands located on or in close proximity of transportation lines. Asking for relief, the petition requested that the present regulations of the Interior Department be changed, adjusting the royalties so they shall not exceed 20 per cent of the oil and gas produced in the case of permits far distant from a railroad.

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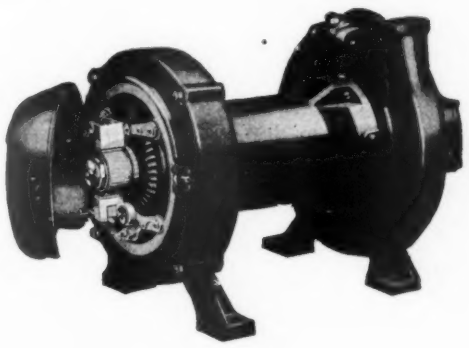

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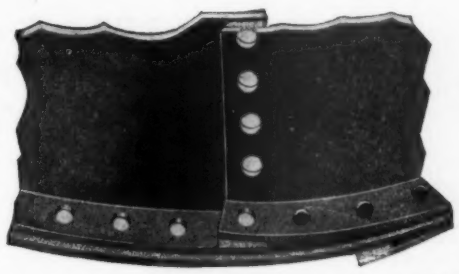
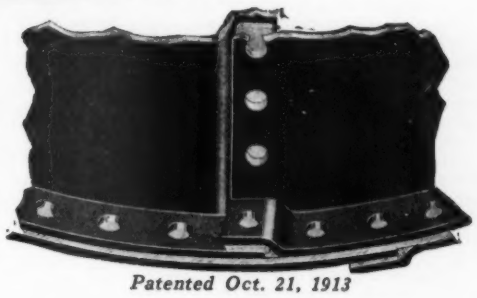


WRONG WAY

RIGHT WAY



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Effect of Poor Gasoline On Motors

Resin Formed When Cracked Distillates Are Improperly Refined. Too Much Sulphur Source of Corrosion Trouble

By T. A. Boyd*
General Motors Research Corp.

The fuel service problems met with most frequently, of course, are those common ones arising from the presence of water, or dirt, or rubber, or some other foreign material, in the fuel system. These it is necessary to discuss here. There is much precedent upon which the manner of handling such problems is based, and they are taken care of in the regular service routine. Ordinarily, gasoline is a fairly uniform material and one that is reasonably well adapted for use in automobile engines. And so, if the systems through which it is supplied are kept clean, the fuel does not present frequent problems to the service man; but sometimes unusual conditions do arise, which then become all the most serious just for the very reason that they are infrequent.

One undesirable and troublesome characteristic sometimes possessed by cracked gasoline and mixed fuels containing cracked distillates is that occasionally a brown varnish-like resin separates from them in carbureters and manifolds and on intake-valves. The deposit is thickest and toughest on surfaces that are warm during operation, and from which the gum-containing gasoline evaporates, leaving its dissolved varnish behind.

In some cases, the deposit of brown tar becomes so bad that it causes moving parts, such, for example, as throttle-valves and intake-valves, to stick, and so actually prevents operation of the engine. One instance came to my attention some time ago in which the throttle-valve of the carbureter of a fire-engine became so badly gummed up that the frantic firemen could not move it enough to get the engine started at all when the fire-alarm rang wildly in their station.

Presumably, this gumming occurs only when the cracked distillate has not been properly refined. Fortunately, it happens on occasions that are comparatively infrequent. The problem has been solved by the refiner, for the most part at least, by suitable treatment of the gasoline in the refining process. But cracking of heavy oils to gasoline is done very extensively in this country now, and rightly so, because the fuel thus produced is essential to the maintenance of our tremendous volume of automotive transportation. Hence, it is not surprising that, on rare occasions, trouble results from some product of the refinery having gone bad.

The formation of resin in a stored gasoline increases with the age of the liquid, and the warmer the place of storage, the more rapid is the increase. Thus, in the case of the infrequently used fire-engine mentioned above, gasoline probably remained in its fuel-tank for months before it was all used. Not only this, but it also stood there at the warm temperature of the engine-house in summer and steam-heated in winter. Certainly, those were ideal conditions for the formation or resinous compounds in the fuel.

What Sample Showed.

We secured a sample of the gasoline from the fuel-tank of this ill-fated fire-engine. This liquid is now 4 years old. When first collected, it looked like any other gasoline. The fact that it contained a varnish-like gum in solution could not be known, except by carefully evaporating a sample of it in an open vessel. But now, after having stood in a cabinet in our laboratory for so long, the gum in the liquid has increased until it can no longer all be held in solution, and a considerable pool of resin has separated and collected at the bottom of the bottle.

Figure 1 is a view of the intake-valve of an engine that had been run on a gasoline containing gummy constituents. Note the tar that has baked on its upper face and stem. In this case, inasmuch as the valve is from a single-cylinder engine, the engine finally refused to run, because

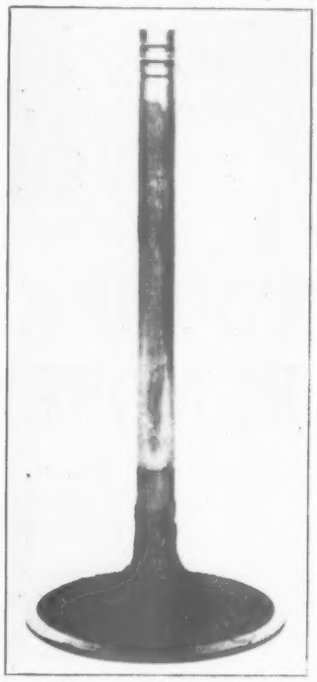

Fig. 1.—Intake valve from engine run on gasoline containing gum forming constitutents. Note the tarry coke baked on the upper face and stem. The sticky deposit on its stem held this valve open and stopped the engine, which happened to be a single cylinder one

the intake-valve was held open by the sticky resin deposited on its stem. The air-passage of a carbureter, in another case, became so heavily coated with a dark brown resin, or tar, left there by the gasoline that had evaporated from it, that a slow stream of tar ran down and out of the open end of the carbureter.

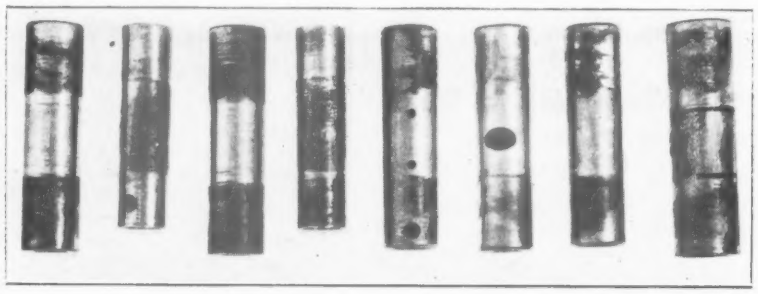

Fig. 2.—Corroded wrist pins from engines run on fuels too high in sulphur.

In the service station, a coating of this gum can easily be removed from surfaces on which it has been deposited by washing them with acetone. Alcohol can be used, but acetone is much more effective. The only means available to the service man for really correcting the trouble, however, in case he should encounter it, is to prevent further deposits of gum by changing the fuel to one that does not leave a resin in the induction passages.

Probably a more common trouble that results from the tendency of gasoline to deposit resins arises in the following manner. A very small quantity of resinous material will separate from almost any gasoline that stands for a long time in the fuel container of a car. Settling there, it binds together such dirt as may come into contact with it. Then, some time if a blended fuel containing benzol or alcohol should happen to be put into the fuel system, this resinous dirt-containing deposit, being somewhat soluble in such liquids, is loosened or dissolved away, setting free at the same time the dirt that it holds. The result is that screens and small openings quickly become clogged with the freed sediment, not because the new fuel itself is undesirable, but simply because it has the property of cleaning out deposits of gum previously made by gasoline. The only remedy for such a condition, of course, is to clean all the dirt from the fuel-system in a thorough manner. From the nature of things, the new fuel may usually be relied upon to loosen the dirt, thereby putting it into shape for removal.

Corrosion From Fuel.

As the relation of fuel to engine corrosion has been discussed in two other papers presented at this meeting, I shall refer to it only briefly. Your attention has been called above to the fact that a gasoline engine manufactures much water. Sometimes part of this water condenses to a liquid directly in the combustion-chamber, as, for example, during the starting and warming-up of a cold engine. In case an engine should be started from the cold state and then be allowed to fire only a few charges, the inside of its cylinders may remain wet with condensed water. If an engine in that condition be allowed to stand for some time when the temperature is very low, the water in its cylinders may even form ice and freeze the pistons tight. The cooling-system of automobile engines are made to take care of hot summer temperatures. They are so adequate, therefore, that during operation on cold winter days and nights, cylinder-walls may for a considerable time remain cold enough to chill water out of the steam-laden products of combustion. During cold weather, too, a little of the water vapor in the burnt gases that blow past the piston into the crankcase of some engines condenses out there, as a liquid and becomes a menace to polished bearing-surfaces.

In the crankcase or other parts of the engine, water is bad enough in itself, but sometimes it becomes much more of a hazard by having other products of combustion dissolved in it. Nearly all liquid fuels contain a minute quantity of sulphur, some much more than others. During the combustion of the fuel the sulphur burns, too, producing its oxides, sulphur dioxide and sulphur trioxide. For the most part, these burnt products of sulphur are blown away from the engine with the regular exhaust-gas and are harmless. The oxides of sulphur, however, have the property of dissolving readily in liquid water and, when they do so, of forming acids, one of which is the familiar sulphuric acid used in the storage-battery of the car.

If an engine happens to be afflicted with the bad combination of water in its cylinders, or its crankcase, and of too high a concentration of sulphur in the fuel upon which it operates, a small portion of the burnt sulphur will dissolve in the water, making a weak acid out of it. The effect of such a situation is much the same as if a small quantity of dilute battery-acid had been thrown into the engine. Whether the familiar saying that water and oil will not mix is true or not, the fact remains that any acid water in the lubricating system of an engine will reach the bearing-surfaces by being forced or pumped along with the oil.

Illustrating the effect of this condition, Figure 2 shows a number of wrist-pins taken from cars run on fuels too high in sulphur. In this view the corroded and roughened bearing-surfaces of the parts are plainly visible.

The ways to correct this situation are three (a) to prevent the condensation or collection of liquid water in the engine (b) to remove it after it has been formed, and (c) to use a fuel that is low in sulphur. Anything that assists in heating the jacket water quickly and in approximating summer operating-conditions by keeping the powerplant warm helps to prevent condensation of water in the engine. Winter-fronts and jacket-water thermostats are examples of such accessories. In the case of engines not provided with an effective means of keeping water out of the lubrication system, it is advisable to change the oil frequently in winter. Although the service man has no direct control over the fuel that is used in engines he must service, he can help to prevent the distribution of those high in sulphur by bringing to the attention of the customer and of the purveyors of the fuel he burns, the effects of too much sulphur in motor fuel.

Federal Specification on Sulphur.

By suitable treatment in refining, the sulphur content of motor fuels can be kept low enough for safety in use. The Federal specification for Government gasoline states that the liquid shall not contain more than 0.1 per cent of sulphur. But some materials sold as motor fuels have been known to contain from seven to eight times this percentage of sulphur.

In what has been said above, it is to be understood, of course, that sulphur in the condition in which it occurs in motor fuels is not acid. It becomes acid in character only after it has been burned in the engine and has come into contact with water in a liquid condition. In the fuel, it occurs in the form of neutral organic compounds, the detection and quantitative determination of which is a highly technical procedure that must be performed by one familiar with that art.

Sulphur is sometimes present in motor fuels, also, in a form directly corrosive to copper and to metals containing copper. In such cases copper strainer-screens are apt to be eaten away or changed into a dark and brittle condition; and other copper or brass parts, such, for example, as those in the carbureter and the vacuum tank, may be corroded or eaten away to a greater or lesser degree. This trouble does not happen often, but when it does occur the only remedy

(Continued on Page 162)

*Extract of paper presented at meeting of Service Division of Society of Automotive Engineers. Reprinted from Society Journal.

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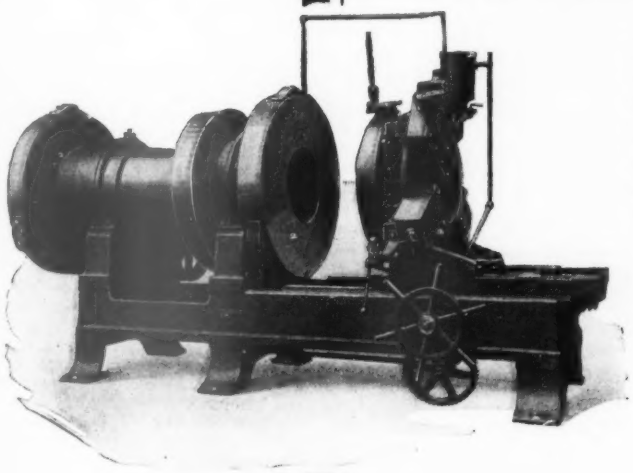

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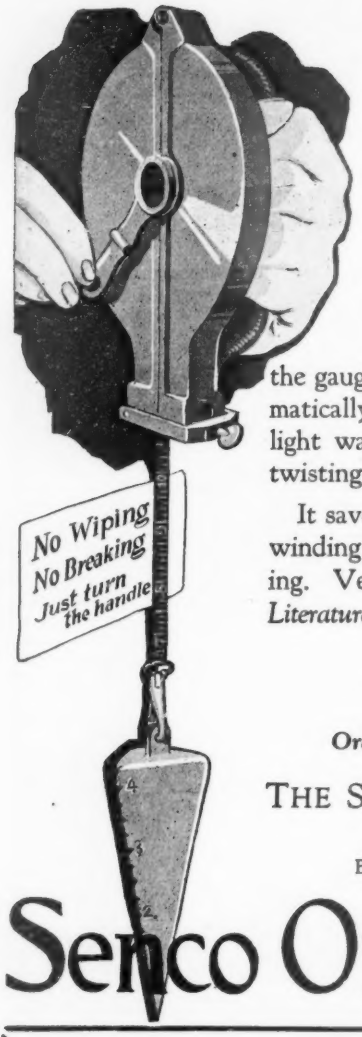

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TRINIDAD'S LAKE OF ASPHALT BEING LOWERED EIGHT INCHES A YEAR

By Special Correspondent

PORT OF SPAIN, Trinidad.—Trinidad's asphalt (pitch) lake is situated on the west coast of Trinidad, 66 miles south of Port of Spain, near the village of La Brea and only one-half mile from the sea; the only point on the island where the boats have sufficient water to come in to dock. The lake is 1¼ miles in diameter, and has been lowered about 21 feet since asphalt was first taken out.

This lake can be termed one of the few natural wonders of the world and thousands of tourists from all points of the globe go there to view it, and usually go away disappointed; it is not a thing of beauty, but food for thought; a really marvelous thing to think about. To fully appreciate the wonders of this lake, one must turn back their thoughts a few thousand years, though its beginning and the source from which it is fed will probably never be known; but its existence can be traced back thousands of years, and it has been known since the island was first settled.

It has been the writer's privilege to visit the lake a number of times, and with each visit it becomes more interesting; volumes could be written about it, but will only attempt to touch on the points most interesting to the reader.

Some time before the coming of civilized man to the island, this lake of pitch boiled over, and flowed like molten lava a distance of one-half mile to the sea, it has never been determined to what distance it went out in the ocean, but it is known to extend over 1 mile.

Pitch or asphalt was first taken from the lake about 47 years ago, and sent to the States and Europe in sail boats, and as the requirements for asphalt in those days were very small, only a few tons a year were removed, but with the building of asphalt roads, and adapting it to the use of roofing and hundreds of other things; the export of pitch has grown by leaps and bounds until in 1915 it had grown to 113,645 tons, only 7,503 tons of it being dried or boiled. In 1925 it had reached the amount of 175,633 tons of which 138,787 tons were dried. The pitch contains 25 per cent water when taken from the lake.

The lake is still being fed from its unknown source, but in spite of this is being lowered at the rate of eight inches a year. This, however, is nothing for the present generation to worry about nor even the future generation, as a hole has been bored in the center of the lake to the depth of 285 feet without passing through the pitch.

Has Its Peculiarities

The lake has its own peculiarities, one of them is, that either light or heavy objects sink within its depths in about the same time, and each returns to the surface in like manner.

The lake itself is firm enough to walk on, even has narrow gauged tracks with strings of eight cars of one ton capacity each running over them continually, but the track must be straightened quite often as the pitch moves in waves. A stump or bunch of palm leaves will disappear in three or four days, and come back to the surface in two or three years.

When the hole was being drilled in the center the stem was lost at the above mentioned depth, only to return to the surface over two years later, in a bent and twisted condition.

Slight gas bubbles rise over the entire area, and the seepage of the pitch is too slow for the eye to detect, though the cavities made removing pitch one day are level with the lake by the next day.

The lake is owned by the English government (Trinidad being an English possession) but is leased to the Trinidad Lake Co., an American concern; and the way the company is equipped and handles the pitch is almost as marvelous as the lake itself. The crude pitch is dug up with picks, breaking out in large chunks or clods quite easily, and looking like crude rubber. One man breaks or digs out for six or eight men and women who carry the chunks on their heads and place it in dump cars, which are pulled up the inclined track by a wire line and drawn with electric power to the dumping platform; there dumped into the different vats and boiled to remove water. When the water is removed the pitch has reached a temperature of about 350 degrees, it is then released through a chute and flows to a trough mounted on a carriage, and from the trough into barrels which are placed in circles, the first operation the barrels are filled about two-thirds full and let stand over night to cool and shrink, they are filled to the level the following day and stored for shipment, the heads not being placed in barrels.

The barrels are filled at the rate of 3,000 per day, and are built in the company's own plant. When the barrels are completed they are dipped into a solution of clay which adheres to the inside of the barrels and prevents the pitch from sticking to the wood.

Continuous Loading

There is at least one boat loading continually, the barrels being conveyed in buckets, holding 4 bbls. each; the buckets clamp on to an endless wire line, which is continually making the circuit to the dock.

The raw or crude pitch which is exported, is loaded into the buckets and taken direct to the ships and dumped in, but before they begin loading the entire bottom and inside walls of the ship are given a thick coat of whitewash which prevents the pitch from sticking. As it takes the ship several days to get away from the tropical sun, the pitch soon melts, and runs together, forming a solid mass, the same as before taken from the lake. When the boat reaches its destination the pitch has to be dug from the boat.

In olden days most of the pitch was shipped by sailboat but was always considered a dangerous cargo for schooners, as they travel much slower than steamers, and with the wind in the same direction for several days at the time the pitch would creep over the way the boat was leaning, and when the wind changed would not go the opposite direction quick enough, causing the boat to ship water and flounder.

The holes dug in the lake if allowed to stand a few days rise above the level, but in a few days flatten down again.

The pitch plant is operated at a minimum cost, the trackage requires very little attention as the pitch gradually comes to it. The company has its own oil fields and refinery which supplies the pitch plant with gas and fuel. It also has a lake of pitch on the mainland of Venezuela, about 55 miles due west of the one in Trinidad, but it differs from the one in Trinidad, covering about 1,500 square miles in a layer of from 7 to 16 feet, and just below the pitch a piling will sink 45 feet on its own accord. The top of the lake is covered with a layer of swamp, mud and water, which is removed by pumps. The Venezuela pitch is much softer than that of Trinidad, and is all shipped in the crude state.

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CHEMICAL PHASES THAT CONTRIBUTE TO THE FORMATION OF PETROLEUM

By Ernest Clark*
Student Member, Institution of Petroleum Technologists, London

Of late years, it has come to be generally realized that oil formation is at least as normal a phase of sedimentation as that of coal, and just as coal is the product of decomposition of terrestrial vegetation, so presumably is oil the result of similar decomposition of other organic materials.

The first chemical changes which occur in the organic matter are undoubtedly putrefactive, in most cases aerobic at first, in others anaerobic from the commencement. Bacteria living under anaerobic conditions may derive their oxygen from the organic substances of which it is a constituent, forming hydrocarbons and organic sulphur, nitrogen and phosphorous compounds — chiefly hydrides. The chemical effect of bacteria seems to be due to catalytic action of the enzymes which are produced; and anaerobic bacteria can cause oxidation or reduction according to the presence of hydrogen or oxygen acceptors. The bacterial changes are accomplished rapidly, compared with the exceedingly slow geological distillation or devolatilisation due presumably to weight and thrust pressure and assisted by depth temperature.

The chief problem is to determine the stage to which bacterial action carries the organic matter in its transformation and to what extent geochemical action is operative. The researches on coal formation have demonstrated that cellulosic plant materials yield a slow continuous evolution of gases rich in hydrogen—chiefly methane, which results in the formation of carbonaceous solid residues yielding a high proportion of aromatics on destructive distillation. In the formation of petroleum different types of substances are involved and it is not known whether these would yield heavy hydrocarbons as a first stage by elimination of carbon dioxide and water, or if methane would represent an intermediate product and the heavy hydrocarbons the result of its polymerisation. In the latter case a bituminous residue would be expected.

Geochemical Process

That the geochemical process is not a simple pressure-heat distillation is indicated by the lack of a common vertical gradation of oils in the field, even allowing for the influence of other factors in determining the grade of oil. The type of oil seems to be essentially a stratigraphical character rather than a vertical one, although the nonconcurrence of asphalt-base oils below those of a paraffin-base in any single pool may have a genetic significance.

It is probable that geochemical action is frequently operative because of the arrestment of biochemical change by the production of antiseptic substances, resulting in a correspondingly different product. It is, however, known that some types of bacteria can exist in hydrocarbons and decompose them.

Remarkably little attention appears to have been given to the importance of the probable admixture of various animal and plant substances in the original organic materials. The differences in chemical nature of these substances must be reflected in variations in the manner and products of their decomposition, but the overall effect of admixture will be a levelling and grading of the types of petroleum.

The general lack of detailed geological knowledge of particular mother rocks of petroleum is relieved by a few researches, and the important part which microorganisms such as diatoms and foraminifera have played in oil formation has been verified. The investigation of modern muds is likewise very incomplete, but there is evidence that animal matter, diatoms, and algae decompose rapidly under anaerobic conditions, and hydrocarbons similar to those occurring in petroleum are formed. That anaerobic bacteria are effective agents in the transformation of vegetable organic materials to coal has been demonstrated by microscopic research; fossil bacteria are known in oil rocks and petroleum has been found in recent bacterial deposits.

Bacterial Action

Bacteria and their enzyme products are the active cause of all forms of putrefaction and are of the greatest importance in the biochemistry of carbon and its derivatives. By bacterial action, proteins readily break down to amino and other compounds and carbohydrates are convertible into alcohols or even fats, but there is doubt as to the probability of fats going beyond fatty acids, due to the development of antiseptic hydrocarbon substances. The transformation of fats into oil at low temperatures by bacterial action on seaweed has presumably been accomplished, however. That fats are the tardiest in undergoing bacterial change is indicated by the increase in their relative proportion in decaying plant and animal organisms in mud. Engler, who obtained hydrocarbon oils from fish oil distilled at about 10 atmospheres and 320 degrees Centigrade, concluded that the elimination of the proteins was a necessary first stage in the formation of petroleums, leaving the fats to be hydrolysed, followed by the elimination of carbon dioxide from fatty acids and water from alcohols and yielding heavy hydrocarbons, probably containing oxy-compounds. The various series of petroleum hydrocarbons were derived from side products of these reactions and by the breaking down of the high molecular weight oxy-compounds by geochemical processes.

Nitrogenous bases occur in many crudes, indicating that complete removal of nitrogen compounds is not necessary; N_2 and CO_2 are common constituents of natural gas. Phosphates are difficultly soluble and would largely remain in the mother rock; where searched for, they were found in oil, water and sediments, presumably associated with soluble oxidation products of nitrogen bases. The direct formation of heavy hydrocarbons by elimination of oxygen as CO_2 and water, at quite low temperatures, is more likely than the polymerisation of methane; for the simplification of heavy hydrocarbon molecules is much easier in practice than polymerisation of the lower paraffins. The polymerisation of unsaturated hydrocarbons by sulphur compounds is readily accomplished, and many asphaltic oils contain a large proportion of thio-asphaltenes.

Distillation Theory

The extent to which microbian action and carbonisation participate in the chemical changes of the organic substances may largely determine the type of oil produced; it has even been suggested that some plant materials may give either oil or coal, though none of the intermediate grades seem to have been found. It is significant to note that with the passing of years and increased knowledge of the reactions involved, more importance is being attached to bacterial action, due presumably to failure of the older distillation theories to account for the observed facts. Restriction of importance does not constitute rejection, however, and it is very probable that much of the natural gas associated with oil is to be ascribed to them, especially where cellulosic materials are concerned.

A logical conclusion of the formation of oil mainly by pressure—heat—time distillation would be an original direct relationship of the degree of metamorphism and grade of oil produced—the distillate varying as the composition of the mother substance constantly altered, or presuming methane to be the main product, the degree of polymerisation depending on concentration and pressure. In the Appalachian geosynclinal, the main coal series occurs above the oil se-

*The paper of which this is part was awarded the Students' Medal and Prize.

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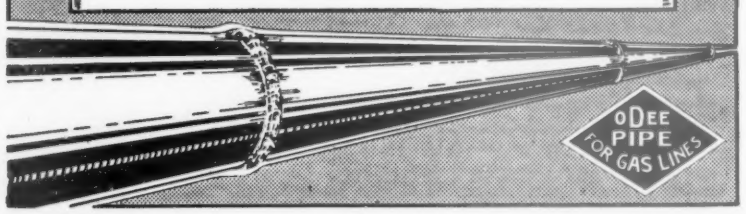

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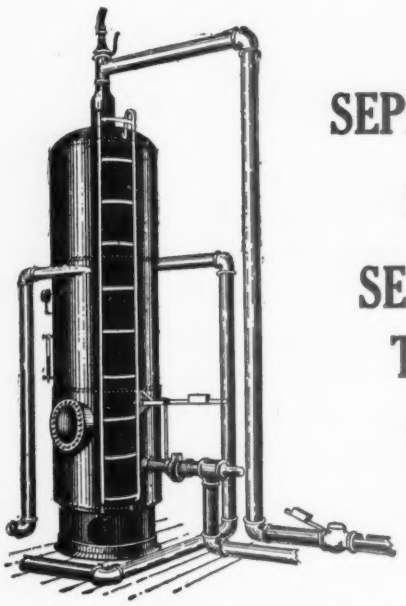

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ries and the degree of metamorphism as measured by the carbon content of the coals (ash free) has been correlated with the grade of oil beneath:

Coal and Oil

From a map contoured in equal "fixed carbon" lines (isovols) the oil prospects of different areas can be estimated. These results have been interpreted as convincing proof that the petroleum was generated by geological distillation, or devolatilisation mainly of plant organic matter in the carbonaceous shales, and implied a close association between oil and coal formation. Since the coal metamorphism is closely related to the intensity of folding, thrust pressure is presumably the chief cause of volatilisation.

There are, however, certain difficulties to be explained before such sweeping statements can be accepted. The coal and oil series are separated by an important unconformity, showing that movement of the lower petroliferous series had occurred before the coal was formed. No allowance is made for variation in the original materials or mode of origin of coal or oil over an area several thousand square miles in extent whose deposits vary greatly in thickness and lithology. The occurrence of banded bituminous—anthracitic coal seams in Scotland and the detailed evidence concerning the relation of anthracite and other coals in South Wales, shows that the loss of volatiles is largely influenced by the amount of preliminary biological decomposition as well as the intensity of geophysical factors. The carbon ratios of cannels are 10—20 per cent lower than of corresponding bituminous coals.

Migration

The migration of the heavier liquid hydrocarbons across the bedding of compacted shales is a process difficult to imagine without an active driving force, especially at low temperatures; neither can folding be a possible cause, for the structures of the Appalachian oil fields are extremely slight, and may be due to deposition and compaction effects rather than to horizontal pressure. The oil accumulations are largely due to lithological factors, but gas occupies the anticlinal zones and there is segregation and differentiation of oil, gas and water which must have required a bodily movement of the liquids along the sands. In the absence of meteoric circulation, compaction and folding, it is difficult to explain this movement.

It might be urged that during the immense time interval, the vehicular action of the gas would be sufficient to cause concentration, even with such low dips, but the theory itself demands that lateral movement of the oil be slight.

This question of the extent of migration is of importance because the eastward variation in character of the Appalachian oils can be explained mainly as a migration phenomenon. As the vast pile of sediments compacted, brine, gas and oil was expressed from the clays into the sands, where the lateral movement of liquids from the central area towards the fringe of the geosyncline took place. The superior mobility of the gas allowed it to travel faster than the oil together with the lighter liquid hydrocarbons, with the result that the oils to the east contain an increasing proportion of volatiles and are finally overlapped by the gas. Such a differentiation would be assisted by the depth temperature, extreme flatness of the structures and continuity of the sands.

Oil-Forming Conditions

It will be noticed that, according to this theory, oil-forming conditions are restricted mainly to the broad central area of the geosyncline; gas would be expected particularly in all domes, fringed by oil, which would also occupy terrace and lens traps; the remaining gas continued its migration and now occupies the area to the east. This is approaching the edge of the geosyncline and area of stronger folding; the thrust pressure of which this folding is an effect is probably chiefly responsible for the degree of devolatilisation of the coals and so the grade of oil and metamorphism of coal have been equated to the same cause.

So long as alternative explanations of the observed effects are possible, any sweeping generalisations regarding the origin of the oil will be unreliable. According to the distillation theory oil was presumably formed in the earlier stages of folding in the areas which now contain only gas, and has therefore been almost completely metamorphosed, but no other explanation than migration can account for the further disappearance of the gas itself to leave only residues and traces. For reasons already stated it is improbable that kerogen shales produced oil, and such dynamochemical action is only known to produce the lower members of the paraffin series, chiefly methane, so that the direct production of heavy hydrocarbons by geochemical distillation is as much assumption as by any other process. In this case polymerisation cannot be resorted to, for increased pressure results in disintegration according to the theory.

Only Partial Cause

Summarizing, therefore, although dynamochemical action probably does occur, in the absence of verification it should be held mainly responsible for the lighter hydrocarbons; it is only a partial cause, whose proportional effect is obviously less in younger fields.

Devolatilisation should be distinguished from the other geochemical action resulting in the production of heavy hydrocarbons by elimination of CO_2 and water, though these reactions probably occur together, so long as the second is active.

It is frequently urged that the high gas pressure of most oil pools is inconsistent with the formation of the petroleum approximately contemporaneous with sedimentation. But gas pressure may be due to causes other than generation of gas after consolidation, chief of which is the reduction of pore space by compaction of the clay to shale.

Suppose the oil and gas is being formed in the body of a depositing organic mud; the layers of sediment are consolidating according to grade and superincumbent material and the liquids are squeezed towards those areas where relief from pressure is easiest, the oil and gas constituting the disperse phase in brine. Movement of the globules is dependent on the flow of water, and will be more sluggish, resulting in partial concentration of the oil and gas—particularly gas—in the upper layers. Deeper in the series liquids are expressed into the porous horizons, since these probably constitute avenues of relief by lateral flow to low-pressure zones.

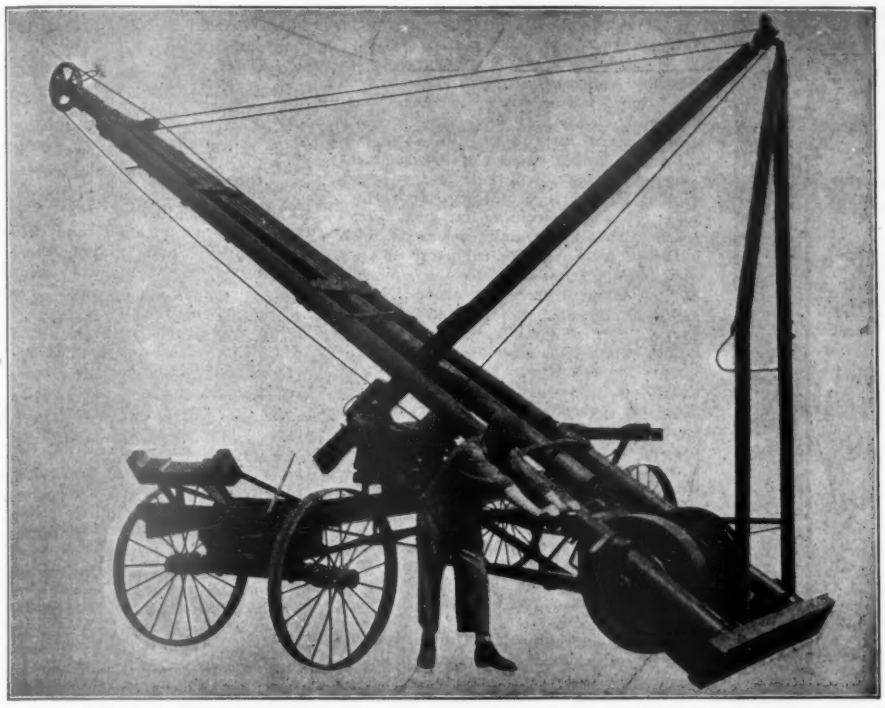
Hydrocarbons Concentrated

A sand is deposited and overlain by more clay; as it descends with regard to the surface, it receives the oil and gas-rich liquid, and owing to the pressure at the subface always exceeding that at the superface, will continue to receive liquids in diminishing quantity until consolidation is completed. Thus the globules of oil and gas are flushed into the sands, but, owing to their coalescence in moving through the more open sand, and to the superior surface tension of water, the hydrocarbons are concentrated in the sands at the expense of the clays.

The pressure on the gas and oil in the sands, being capable only of transmission by the liquids so long as the pore space remains constant, will equal the rock pressure, minus the mechanical resistance to liquid movement in the sand and shale, and the resistance of the shale itself to compression. The resultant pressure will equal the gas pressure in the sands, which will be larger when the gas is segregated, owing to lessening of the capillarity resistance.

When the beds are folded the more plastic clays are squeezed into the crests of anticlines and troughs of synclines, with rock flowage and secondary folding facilitating the exchange of liquids in these zones. The net result is the enrichment of the sand with oil and the generation of lateral movements of liquids in the strata, directed towards the crestal zones. Without these lateral movements, due to compaction and later to folding, it has been shown that the gravitational separation of oil, gas and water is unlikely to occur. It is therefore

QUICK ACTION



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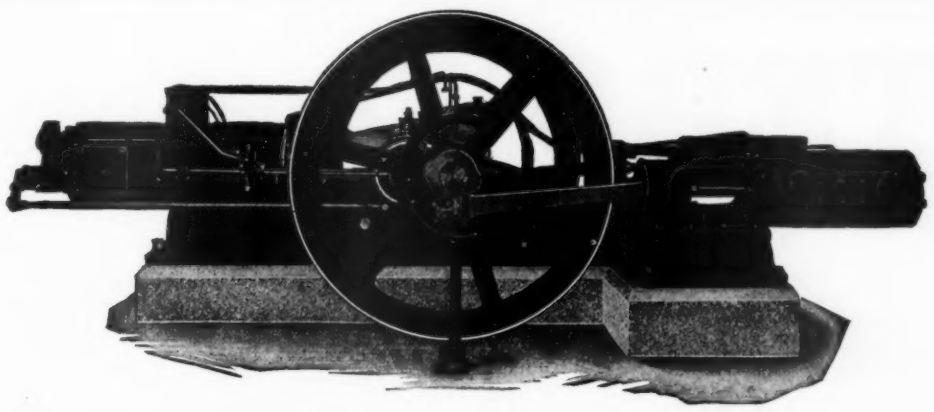

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probable that where oil accumulations occur in gently folded strata without meteoric circulation, the oil was formed before compaction was accomplished.

Chemical Reactions

In the case of a geosyncline it is evident that migration would be towards the rim, and any oil and gas carried from the central area would be concentrated in the first structural or lithological trap which was encountered, then overflow to the next—a conclusion which agrees well with observed facts, e.g., Big Horn Basin.

The main interest of any theory of oil origin hinges about the details of the chemical change of organic matter to petroleum, since it is fairly certain that most types of organic matter may participate. The chief qualifications of such a theory from a geological point of view appear to be: that the reactions can occur at low temperatures, not above 150 degrees Centigrade, preferably very much lower; the completion of the reactions before complete consolidation of the sediments is desirable; the decomposition of proteins, carbohydrates, and glycerides must be accounted for, and the elimination from the oil of much of the nitrogen and phosphorus; the genetic significance, if any, of paraffin, mixed and asphalt-base crude oils should be explained. There is much to be said for the opinion that the initial stages are bacterial, and after the oils have been formed, a slow yield of gas might be responsible for considerably augmenting the gas pressure.

The chief avenues of research would seem to be:

(a) Physiographical, involving scientific investigation of sediments which are forming at the present day.

(b) Geological, involving an enlargement of detailed knowledge of the lithology and palaeogeography of petroliferous sediments and the factors controlling the movements and behavior of oil, gas and brine in them.

(c) The chemical problems would probably be outlined from the results of (a) and (b.)

NEW GEOLOGICAL BOOK

A new book on a special phase of geology has just come from the press. A treatise on sedimentation, by William H. Twenhofel, University of Wisconsin, assisted by many specialists, including David White, William Bucher, Eliot Blackwelder, W. A. Tarr and E. M. Kendle. Published by The Williams & Wilkins Co., Baltimore, Md., Illustrated. Price $7.50.

This book was prepared in a unique and very commendable way. Manuscripts were submitted by many men upon the phase of sedimentation most familiar to them. These were modified and placed in their proper proportions by the author.

Sedimentation and sediments are taken up in great detail from sources and production of sediment through transportation, deposition and lithification. Conditions modifying sedimentary processes are then discussed along with the effects of organisms. The chapter on the products of sedimentation is especially interesting and complete. Structures, texture and colors of sediments are analyzed and environments of sedimentation are also considered in detail.

The general impression received from a review of this book is distinctly satisfactory, for it brings together in one volume a vast array of scattered facts. It is quite detailed in form and well indexed, so that it should serve as a valuable reference to all geologists.

RUSSELL S. TARR.

LOUISIANA ROYALTIES

SHREVEPORT, La., June 19.—Bonuses and royalties from oil leases netted the Louisiana State Land Department $130,982.43 last year, according to a recent report made to the Governor and State Legislature. The report showed an increase of approximately $33,000 over the last report. The state receives royalties from two producers in Caddo Parish in addition to royalties from the Caddo Lake area.

Russian Oil Fields Listed As Available For New Concessions

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 19.—Concessions and concession possibilities in Russia are told in a leading article of the publication issued by the Soviet Government at its headquarters in this city. It describes the oil fields that are now available for concessions.

Besides the oil fields in the Caucasus which are exploited by the Government, there are other rich oil lands in various parts of the Soviet Union, which could be suitable objects for concessions.

The first place among these oil lands is held by the Ural-Emba region covering an area of 215,000 square kilometers, of which 70,000 square kilometers can be classified as oil-bearing lands.

Emba oil is of particularly high quality which lends itself easily to the production of lubricating oils. According to the opinion of foreign geologists, the Emba region contains an oil reserve of between 200 and 225 million tons. The Emba oil region, and particularly its northwestern part, has not been surveyed to any considerable extent. The richest oil sectors are situated in the center of the Ural-Emba region, in the valley of the river Tersakan.

The Emba oil region extends on the one hand to the Caspian Sea and on the other hand to the Tashkent Railroad. The valley of the Tersakan River is situated at a considerable distance from both the railroad and the sea.

There are at present 60 oil sectors in the Emba region situated at a comparatively small distance from each other. Prior to the Revolution of 1917 the Dosser fields were under regular exploitation In 1914 the output of oil in this sector reached 17,000 tons. In 1915 operations were begun on the Makot sector which was connected by pipe systems with the Dossor fields.

An intensive exploitation of the richest oil sectors of the Emba region would render necessary the equipment of a port in Guriev on the Caspian Sea, the construction of an aqueduct of pipe systems connecting the various sectors, and of a refining plant in Samara on the Volga.

The other regions offering concession possibilities can be divided into two groups: In the first group is included Cheleken Island near the southeastern shore of the Caspian Sea (in 1911 its oil fields turned out 217,000 tons of petroleum, 37 wells being in operation); Berikey on the eastern shore of the Caspian Sea, and finally Santo and Chimion in the Uzbek Soviet Republic in Soviet Central Asia.

The Soviet Government is prepared to lease the prospected parts of these oil regions on condition that the operations be started immediately on the basis of a minimum production program with the understanding that further prospecting activities are to be undertaken in the unexplored parts of the oil regions.

The other group of possible concessions includes the Kerch peninsula on the Western end of the Crimea, the Taman peninsula on the other side of the Kerch Strait, the Kakhetia region in Georgia (Transcaucasia), and the Ukhta district in the Pechora region. They could all be granted as concessions for prospecting purposes with subsequent exploitation.

NAVAL OIL RESERVES

WASHINGTON, D. C., June 19.—The President has submitted to the House of Representatives a supplementary estimate of $60,000 to protect the interests of the United States in the Mount Diablo Naval Reserve oil lands. This money is to pay for legal expenses incurred and to be incurred. This reserve is on the border of Naval Reserve No. 1 in California.

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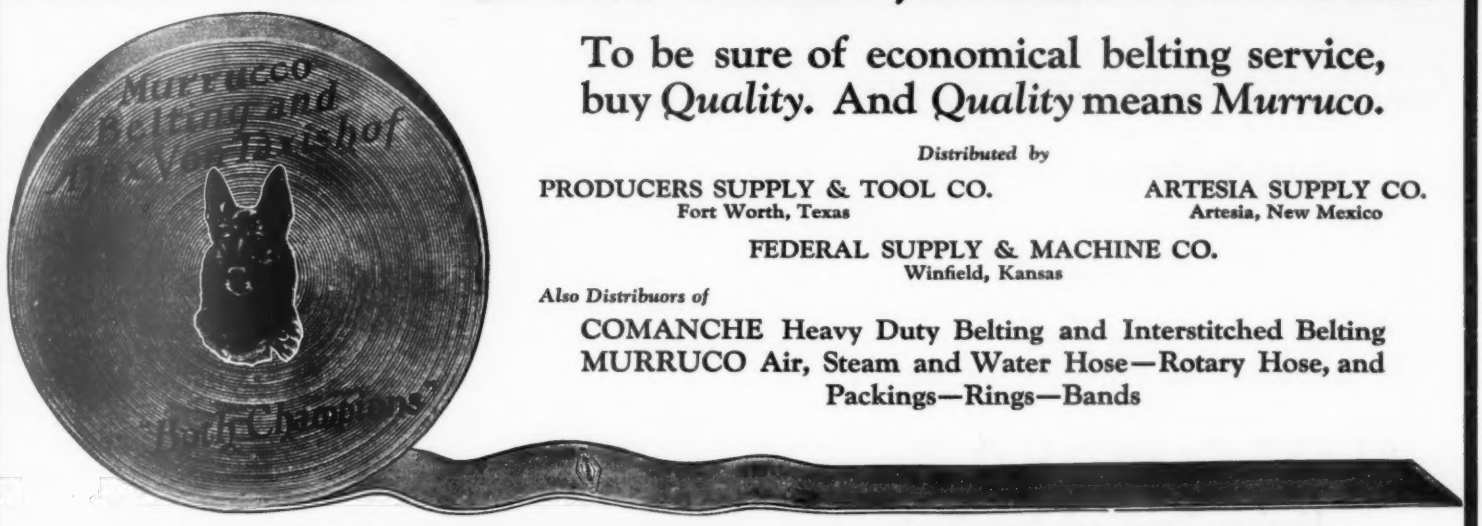

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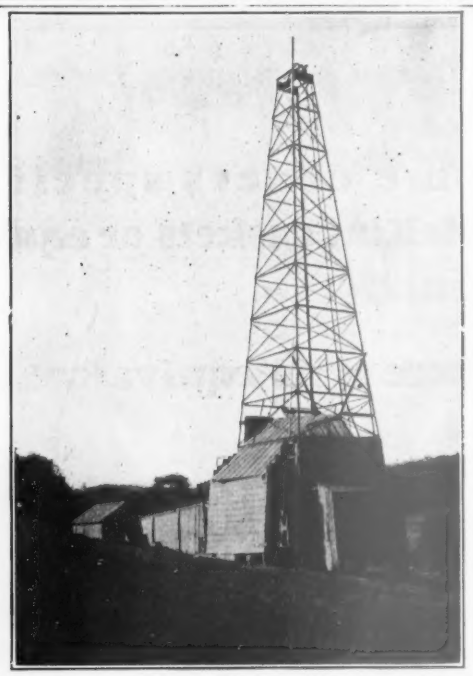

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PRELIMINARY TESTS AT NAVY YARD ON EXPERIMENTAL OIL ENGINE

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 19.—The Secretary of the Navy has announced that the preliminary tests of the experimental oil engine now under development by the Navy, have proven satisfactory. These tests have been made at the Aeronautical Engine Laboratory at the Philadelphia Navy Yard.

This development was undertaken nearly two years ago, with a view to utilizing the principles involved in a high speed heavy oil engine for rigid airships. In a statement made public by the Navy Department it is said to be a well-known fact that hazard by fire and explosion of gasoline vapors in rigid airships is very great. These hazards are very largely avoided by the use of this heavy oil.

Not only is this engine of special service for aviation purposes but its inventor, Andre C. Attendu, and those associated with him, claim it has equal merit when applied to submarines, dredges, auxiliary engines on battleships, and for automobiles and road engines, so that its industrial value is looked upon as really more important, from the standpoint of its future use, than is the service it may render for the purposes achieved by this series of experiments carried on by the Navy for its own use.

Flexibility a Feature

The idea embodied in the patents involved in the design of this engine is its flexibility and it is the first oil engine embodying this idea in a successful degree. This really makes elimination of the fire hazard a matter of secondary importance when the future scope of this engine's usefulness is considered from an industrial point of view.

Up to this time it is stated all oil engines have had a constant speed. Now for the first time as great flexibility has been developed by the use of a heavy oil as can be achieved in the gasoline engine.

In the office of T. L. Tansley, the patent attorney who represents Attendu Engines, Ltd., in the United States, there is a photograph of an automobile with a record of having run 378 miles on this heavy oil, making 23.6 miles per gallon. At the time this record was made the oil used was purchased in Canada for 7 cents per gallon and for 3.5 cents per gallon in the United States. The price in the United States at this time probably would be somewhere between 5 and 6 cents per gallon. It will be observed that this test obtained about the same mileage on this heavy oil as is now obtained under favorable conditions under long runs by the use of gasoline and as gasoline has a value of three to four times as much as in the value of this heavy oil the full importance of this statement in respect to economy of use of this oil is evident.

The heavy oil used in the tests made at the Philadelphia Navy Yard runs from 18 to 22 degrees A. P. I. In other words, these tests indicate the possibility in the near future of substituting this grade of fuel oil for gasoline.

This engine was designed and built by Andre C. Attendu, a Frenchman who moved to Montreal, Canada, about 20 years ago. He has experimented along the ideas that resulted in the construction of this engine for many years.

Paraffin vs. Asphalt Base

It is stated that when these experiments were begun, the question arose in respect to the relative merits of paraffin base oil and asphaltic base oil, and it was found that asphaltic base oil gave more power and incidentally produced more smoke than the paraffin base oil available. The production of smoke was a disadvantage, and it is stated has been eliminated by the development of the engine. It is claimed this engine was run on a race track at Montreal, with fuel oil as heavy as from 10 degrees to 12 degrees. Eventually the fuel oil from 18 to 22 degrees A. P. I., used in this experiment was obtained from the Standard Oil refinery at Catonsville, near Baltimore, and a great deal of this oil has since been used in making these tests. It seems likely that more paraffin base oil might have been experimented with but there was a great difficulty in obtaining it, even at Philadelphia. In Montreal it was obtained from the Imperial Oil Co., a subsidiary of the Standard Oil Co. However, in pursuing the experiments the asphaltic base oil has been almost wholly relied upon.

This fuel oil testing from 18 to 22 degrees A. P. I. and used in these experiments, is further described as having the following characteristics:

Closed cup, 165 degrees Fahrenheit; open cup, 208 degrees Fahrenheit; fire point, 271 degrees Fahrenheit; specific gravity, 19.3 A. P. I. In the experiments made at Montreal the fire point of the oil was 245 degrees Fahrenheit.

It is claimed that this engine shows very low revolutions per minute for the motor, that the proportionate horsepower is greater in the oil engine than in the gasoline engine in obtaining pulling power when needed. This, it is claimed, makes it an especially valuable oil for bus work.

Navy Department's Report

This experimental work at the Aeronautical Engine Laboratory at the Philadelphia Navy Yard, will be continued for some time. The statement of the Navy department says:

"The experimental engine is a two-cylinder aircraft engine, designed to develop a 125 horsepower and to weigh not over 3½ pounds per horsepower. The experimental engine is a high speed model, designed to demonstrate in a small engine the possibility of burning very heavy oil at high crankshaft speed."

It is stated that this engine has demonstrated the entire feasibility of accomplishing this result. The Navy regards these preliminary tests on the experimental model as having been completed and the Navy Department is now prepared to go ahead with the construction of larger engines. Whether this will be undertaken depends largely upon the passage by Congress of the bill prepared by the House Naval Affairs Committee, providing for a five-year building program. This program includes two large rigid airships. If these airships are authorized, it is proposed to develop heavy oil engines for utilizing the basic principles of the Attendu engine.

No announcement has been made of the plans of the Attendu Engines, Ltd., for the further application of this engine for commercial purposes. Indeed, this announcement by the Navy Department is the first determination of the success of the principles involved in this engine from an official source in the United States.

Of course, it will not be understood that this statement overlooks the fact that heavy oil has been used in constant speed engines. The essential determination in favor of this engine is the fact that it is of flexible speed. Simply stated, this involves adjusting the precompression pressure and timing the injection and quantity of the fuel injected. One of the advantages claimed for it is easy starting. The ordinary automobile starter is used without a spark plug. In other words, it runs on compression pressure.

Described by Inventor

The inventor of this engine, Mr. Attendu, in France, did work on the Diesel engine, which suggested the possibility of using the low priced by-products of gasoline production, and this led to the designing and building of several experimental engines of small size and low weight to run on fuel oil and develop the power required for average automotive work.

As described by the inventor, the first engine, which was built in 1921 and given its first test runs in 1922, was a four-cylinder two-cycle engine operated on the air-injection straight Diesel principle.

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Scavenging air was supplied by step cylinders and the injection air was supplied at a pressure of 1,200 pounds per square inch by a small compressor built integral with the engine. The engine compression pressure was 300 pounds and the fuel used was fuel oil of from 18 to 22 A. P. I. gravity. This engine weighed 1,100 pounds and was expected to develop 40 horsepower at 1,600 r.p.m., but in test runs it ran at 1,300 r.p.m., developed from 36 to 38 i.p.h. and only 11 b.h.p, and consumed nearly 2 pounds of fuel per b.h.p. It was hard to start and oxidation of the fuel by the injection air caused the valves to leak. Nevertheless, it ran and was fairly flexible under load from 300 to 1,300 r.p.m.

Tests of this engine made at McGill University gave results that led to the decision to build a second experimental engine, substituting solid fuel injection for air injection to eliminate the air compressor, the intercoolers and the oxidizing effect of air on the fuel. This also was a four-cylinder engine, made of cast iron and having a compression pressure of 405 pounds. The step cylinders for scavenging were retained and it operated on the same fuel as the first engine. In preliminary runs, the engine started on the first few revolutions, attained a speed of 1,600 r.p.m and developed 18 b.h.p. Scavenging pressure was found to be too high and was reduced to 14 pounds. Two transfer valves were substituted for the single valve and the rotary valves of the working cylinders were changed to poppet valves. To give better scavenging, the compressors, which originally discharged directly into the working cylinders, were connected to a common reservoir in the engine jacket and each working cylinder was scavenged with air from the reservoir. After these changes, the engine developed 46 b.hp. Changes in the fuel pump and injector adjustments increased this to 56 b.h.p. at 1,400 r.p.m. Fuel consumption of the engine is at the rate of 0.76 pounds per b.h.p. at from 1,200 to 1,400 r.p.m. and 0.87 pounds per b. h.p. at 600 r.p.m. The engine idles down to 120 r.p.m. and starts readily from dead cold after three to five revolutions with a 6-volt starter.

Experimental Engine

In August, 1924, a contract was secured from the Navy Department by the Eastern Engineering Co., Ltd., of Montreal, for the building of a two-cylinder experimental engine to determine whether a light weight heavy oil engine suitable for airship work would stand the high compression pressures at high speed. This was built to operate on the same principle as the four-cylinder engine and designed to develop 100 horsepower at 1,500 r.p.m. or 125 horsepower at 1,750 r.p.m. and to have a weight of 3.8 pounds per b.h.p. The only change in design is that the air compressor is on the side of the engine and the pistons of the working cylinders are of standard truck design.

The aviation engine was delivered to the engine testing laboratory at the League Island Navy Yard in February, 1925, and after several tests and improvements on adjustments, especially on the lubricating oil system, showed a brake horsepower output of 85 at 1,620 r.p.m.

The basis on which these experimental engines were worked out embodied the following theoretical requirements:

(1) For oil-burning engines, the first requirement is a definite and accurately measured quantity of oil for each stroke, this quantity varying with the engine speed or load.

(2) In a high-speed engine, the time of injection of the fuel should be varied in accordance with the speed to avoid late burning.

(3) In a variable speed engine having a wide range of flexibility, the compression of air for combustion should remain practically constant regardless of engine speed, so that, when starting, the pressure built up in the cylinder by the first few revolutions of the engine will raise the temperature sufficiently to burn readily the fuel the engine normally uses without the aid of an outside source of preheating or a firing device of any sort, or without using a lighter fuel for starting purposes. At high speed, the pres-

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sure should not exceed materially the pressure necessary to burn the fuel as soon as it is injected into the cylinders; higher pressures would require a heavier construction and experience has proved that unnecessarily high pressures are detrimental to good running of the engine and fuel economy and prolong general wear.

(4) The controls, especially for motor vehicle and aviation purposes, should be simple, effective and reliable and the response to the controls should be as instantaneous as that of the gasoline engine to its throttle or the timing of its spark.

One of these engines was taken to the city of Washington in October, 1923, to demonstrate the principle to the Patent Office. During these tests, in August, 1924, the Eastern Engineering Co., Ltd., obtained a contract from the Navy Department, on the recommendation of Lieut.-Comdr. E. E. Wilson of the Bureau of Aeronautics, for a two-cylinder experimental engine, to determine whether an engine of light weight would stand high pressures at high speed, that is, whether the heavy oil engine was suitable for airship work.

This two-cylinder engine, embodying the same principle as the small four-cylinder type, has a bore of 5½ inches and a stroke of 6½ inches, and was designed to develop 100 b.h.p at 1,500 r.p.m or 125 horsepower at 1,750 r.p.m. and to have a weight of 3.8 pounds per b.h.p. The only change in design from the four-cylinder type is that the air compressor is on the side of the engine and the pistons of the working cylinders are of the standard trunk design. It was a condition of the contract that all experiments on the engine were to be made at the engine testing laboratory of the League Island Navy Yard, Philadelphia.

Independent Writes How Oil Companies Are Developing Texas

In a letter to the editor of the Houston Chronicle J. K. Hughes of Mexia writes as follows:

Much has been said lately with reference to foreign capital being invested in Texas and with particular reference to oil investments. I think one errs in assuming an attitude antagonistic toward foreign capital for the reason that the lack of foreign capital is the primary cause of the natural resources of Texas being in their present undeveloped state.

Being an independent oil producer, I am more particularly concerned in the oil development of the state than in the development of any other of the natural resources, and naturally so, but at the same time, being a native citizen of Texas and a lover of this great state, I am interested in Texas going forward and being the great state that she deserves to be and having all of her bountiful natural resources developed to the highest degree.

Take the oil industry and review the history in our state for a second. Oil is comparatively new in Texas, having its first appearance at Spindletop in 1901 and since that time oil has been developed in various sections of the state—the Gulf Coast Field, along the Balcones fault, west Texas, northeast Texas and the Panhandle—and each section of the state where oil has been developed has greatly increased in wealth over night, so to speak. Allow me to invite your attention to Limestone County, which was solely dependent upon agriculture before the year 1920 when the first oil well was brought in as a producer. Some sections of Limestone County are good agricultural sections, but a good portion of the county is sandy and clay and very poor land for farming. In 1920 the taxable valuation of the county was $16,421,498 and in 1922, after oil had been developed, the taxable valuation of the county increased to $50,282,401, and in 1925, several years after the flush production had passed and oil settled down on a steady basis, the taxable valuation

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of the county was $42,585,400. This is a specific instance of what oil has done for one county alone, and what is true in this county is likewise true in the other counties where oil has come to the relief of such counties and the citizens thereof.

Debt to Outside Capital

Texas owes its development of oil and gas to the major and independent oil companies and, speaking definitely, Texas owes this development to outside capital. I am not a stockholder of the Standard Oil Co., the Humble Oil & Refining Co., the Magnolia Petroleum Co. or any of the other major oil companies in Texas, but it is a matter of common knowledge that the Standard Oil Co. owns a large portion of the stock of both the Humble Oil & Refining Co. and the Magnolia Petroleum Co. Reference has been made on the part of some that the Standard Oil Co. and companies of the Standard Oil group are unfriendly to outsiders and have one purpose in mind, that is their own personal interests. I do not concur in this statement and, on the other hand, state that the Standard Oil Co., the Humble Oil & Refining Co. and the Magnolia Petroleum Co. are the friends of the independent oil producer. I have always found them willing to help an independent producer both with their money and by taking his oil and paying him fair compensation therefor. I have had occasion on more times than one to go to the Humble Oil & Refining Co. and to the Magnolia Petroleum Co. for loans mounting into the hundreds of thousands of dollars and each time that I asked for the loan same was readily granted. If these companies were oppressors they would not be inclined to make loans to an independent producer, neither would they expend large sums of money extending their pipe lines into a new field in order to take the oil produced by an independent man.

Friendly Feeling

Look at the fields scattered over the great State of Texas and there you will find pipe lines of the major companies, including those of the Standard oil group, and you will find all of the major companies ready, willing and anxious to take the oil produced by the independent producer and pay a just compensation for the oil.

I think that this shows a cordial and friendly feeling on the part of the major companies and it shows the spirit on the part of the Standard Oil Co., the Humble Oil & Refining Co., the Magnolia Petroleum Co. and all the other major companies to help the independent man wherever it is possible for them to do so, and in doing so they render a valuable aid to the independent producer, the oil industry at large and to the State of Texas.

The Standard Oil Co., owning a large portion of the stock of the Humble Oil & Refining Co. and the Magnolia Petroleum Co., is an instance of foreign capital contributing, in a large measure, to the development of the oil industry in Texas, and I think it would be a great benefit to this state if foreign capital were as active in the development of iron, potash and the other hidden treasures. Likewise, the textile mills could be advanced to a great degree if foreign capital were interested to the extent that it should be. The textile industry is in its infancy in this state, but when foreign capital is attracted to it then the industry will expand and grow as it should.

As an independent producer in the state and one not connected as a stockholder with any of the Standard group or major companies of the state, I feel that I am in a position to truly state that the Standard Oil Co. and its subsidiaries in Texas are in all ways friendly and beneficial to the independent producer.

Outside capital has been very kind to the oil industry in Texas, and I advocate, therefore, that we as Texans secure all the northern and eastern capital that we can for Texas and let Texas and the north and east go hand in hand in the development of our great state and the wonderful resources with which she is so richly endowed. Yours very truly,

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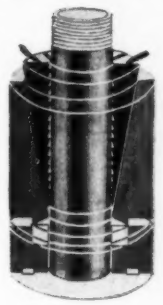

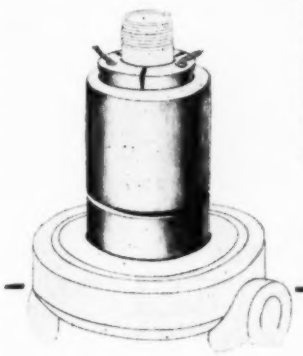

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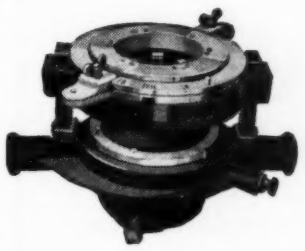

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EFFECT OF POOR GASOLINE ON MOTORS

(Continued from Page 148)

is to change the fuel to one that does not contain sulphur in a form that will corrode copper.

These troubles, resulting from sulphur in the fuel, as well as those due to gummy constituents in gasoline, are practical illustrations of the fact mentioned early in the paper that, in a chemical plant, service problems arise as much from impurities in the raw materials used as from anything else.

Fuel of Improper Characteristics.

We do not have very much of the old-time straight-run gasoline these days. The greater part of the motor fuel is made now by mixing liquids from two or more of the five sources already enumerated. For example, much of our American gasoline is made by mixing materials from the first three of the sources mentioned, namely, a liquid distilled directly from petroleum, one made by cracking heavier oils and one extracted from natural gas.

Such a method, when used intelligently as, be it said to the credit of the refiner, nearly always is done, makes a satisfactory motor-fuel. Straight-run gasoline has no advantage peculiar to it alone. So far as behavior in use is concerned, it would not be possible to distinguish between a straight-run gasoline and a mixed fuel made of components in the proper proportions from the first three of the five sources mentioned.

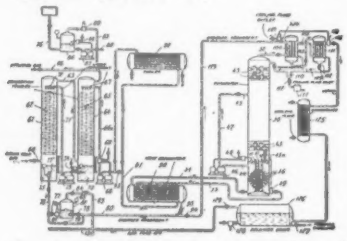
But sometimes persons who distribute gasoline have sold mixtures of liquids not well suited for motor fuel. Such a blend might contain, for example, either a quantity of a too-high-boiling naphtha, or too much of a very volatile material, such as casing-head gasoline. In the first case, the car would be sluggish in operation, because the fuel would not vaporize readily enough. In the second case, the car might be sluggish or erratic in operation, because of gasification of the liquid in the fuel lines and carbureter jets.

Unfortunately, the only reliable means of learning just what the characteristics of a fuel are is to make a laboratory examination of it. The facilities for doing this are not generally available to the service man, of course; consequently, about the only thing he can do is to use his best judgment in the matter.

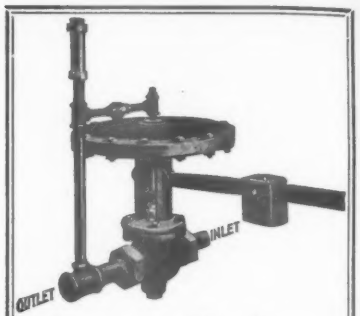
It would be a very good thing if all gasoline could conform to a universal standard, so far as the volatility characteristics are concerned. This is something that we should have, because it would help much in the design, the operation and the servicing of automobiles. Although the time may not yet be ripe for a universally uniform fuel, the extension of cracking, the process by which a heavy oil difficult to vaporize is broken down into one easy to vaporize, is fast rendering possible the making of motor fuels of uniform volatility everywhere within reasonably close limits. If all motor fuels were of the same volatility, it would help not only the service man but also everyone who drives an automobile.

Recent Patents

1,584,504. Gasoline-Recovery Apparatus. Harold B. Bernard, Tulsa, Okla., assignor to Sinclair Oil & Gas Co., Tulsa, Okla., a corporation of Maine. Filed June 20, 1924. Serial No. 721,164. 8 Claims. (Cl. 196—8.)



1. An apparatus for separating absorbed constitutents from liquid absorbents comprising an exhausting tower,



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Organized 1884 — eldest builders of gas regulators in the country. Built in all sizes, from 1 inch to 24 inches; for all service, 1 oz. up to 1,000 lbs. pressure to square inch.
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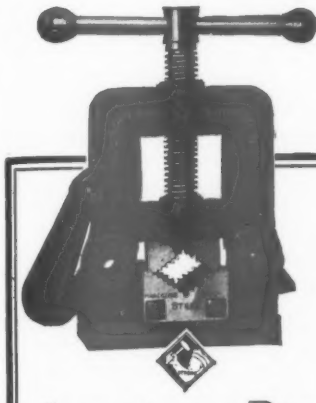

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WEBB CITY—R. C. Woods, 26.

TEXAS
BRECKENRIDGE—Roy Richardson, 127.
MINGUS—C. L. McKinney, 56.
COLORADO—Garry Young, 125.
PANHANDLE—Lee H. Vandell, 217
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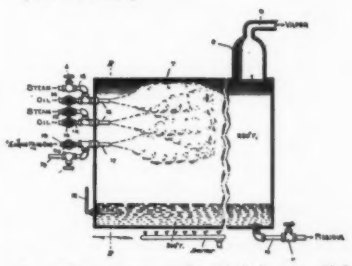
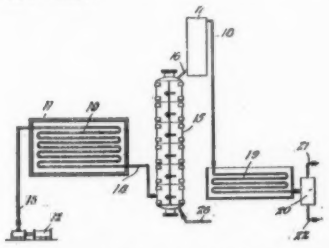
means for promoting gas an liquid contact and heat exchange in the tower arranged above the bottom thereof, a partition arranged in the lower part of the tower dividing it into a heated supply compartment and a discharge compartment opening upwardly into the tower, means for introducing charged liquid absorbent into the supply compartment, means for withdrawing liquid from the supply compartment and discharging the withdrawn liquid into the tower over the upper part of the contact promoting means, means for conducting liquid from the lower part of the contact promoting means to the discharge compartment, and connections for withdrawing vapors and gases from the upper end of the tower and for withdrawing liquid from the discharge compartment.

1,582,764. Process for Obtaining a Light Hydrocarbon. William Landes, Long Beach, Calif. Filed May 19, 1924. Serial No. 714,345. Three claims. (Cl. 196—9.)



1. The process of obtaining a light hydrocarbon consisting in atomizing oil with steam into a chamber, and simultaneously atomizing hydrocarbon gas with steam into the chamber independently of and below the oil so that the gas intercepts particles of oil that drop from above.

1,582,893. Apparatus for Treating Hydrocarbon Oils. Otto Behimer, Port Arthur, Tex., assignor to The Texas Company, New York, N. Y., a Corporation of Texas. Filed February 15, 1924. Serial No. 692,974. 3 Claims. (Cl. 196—119.)



1. Apparatus for treating hydrocarbon oils, a vessel provided with internal heating means and a hinged jacket formed of heat insulating material.

1,581,370. Process of Manufacturing Lubricating Oils. James W. Weir, Fillmore, Calif. Filed November 9, 1925. Serial No. 68,009. 1 Claim. (Cl. 196—147.)

A process of manufacturing lubricating oil stock. which comprises treating the oil stock with sulfuric acid, removing the sludge, neutralizing the stock with an alkaline substance, separating such substance from the oil stock, thereafter applying further sulfuric acid to the oil stock, settling and removing the formed sludge, then agitating the oil stock with a comminuted solid adsorbent material at a temperature below that at which the sludge decomposes to gather a further quantity of the solid suspended sludge, separating the absorbent material with the matters adsorbent thereon from the oil stock, then adding a comminuted solid adsorbent material to the oil stock, heating the admixture to a temperature sufficient to decompose the remaining sludge and liberate sulfur dioxide therefrom, and separating the adsorbent material with the matters adsorbent thereon from the oil stock.

1,581,879. Bolted Steel Tube Still for Distilling Oil. James M. Simms and

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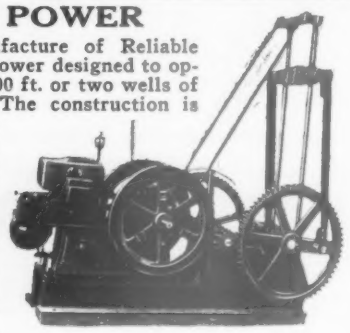

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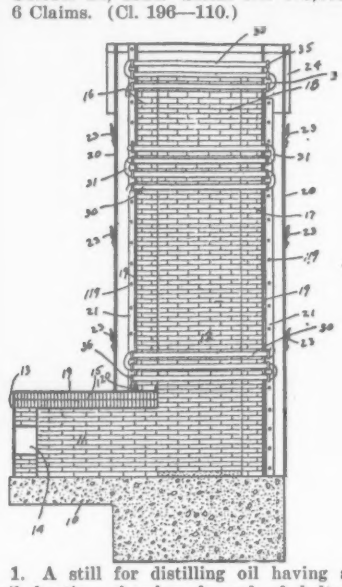
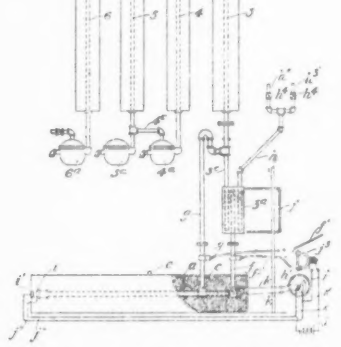
Olpha M. Brooks, Shreveport, La. Filed October 24, 1924. Serial No. 745,668. 6 Claims. (Cl. 196—110.)



1. A still for distilling oil having a coil heating chamber formed of bolted steel tubes lined with clay material, and a continuous coil for the oil formed of a series of short tubes mounted in the wall and extending transversely of the heating chamber, and return bends removably connecting the ends of the adjacent tubes and located outside of the walls of the heating chamber, substantially as set forth.

1,584,048. Apparatus for the Decomposition and Recombination of Hydrocarbons. Alexander Thomas Stuart and Guy Noverre Middleton, Toronto, Ontario, Canada, assignor, by mesne assignments, to Farley G. Clark. Filed July 5, 1917. Serial No. 178,703. Renewed August 10, 1925. 1 Claim. (Cl. 196—57.)



Apparatus for heat treatment of hydrocarbons comprising a cracking retort of heavy walled metal pipe encased in heat insulation and having sufficiently low electrical conductivity to act as a resistor, means for passing current through said pipe to heat the retort to a relatively high temperature, said retort being provided with a feed intake and a vapor offtake, adjustable means for feeding to said intake a mixture of a hydrocarbon and a gas, condenser means connected to said offtake, and a return trap device connecting said condenser means with said intake.

1,572,374. Heat-Exchange Device. Hugh Logie Allen, Ayr, Scotland, Filed December 15, 1919. Serial No. 334,791. Three claims. (Cl. 196—138.)

1. A heat exchange device for fractionating hydrocarbons comprising a vessel having partitions spaced apart to provide three superposed compartments, the upper partition consisting of two tube plates situated relatively closely together, a hydrocarbon inlet to the lowermost compartment, a series of tubes connecting said lowermost compartment to

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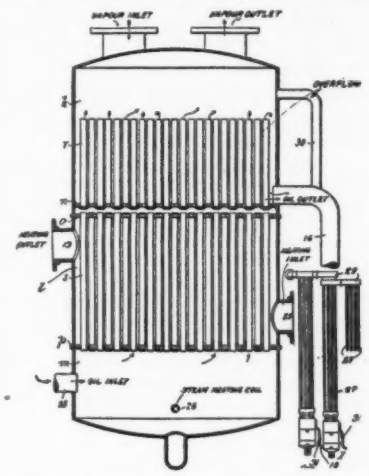
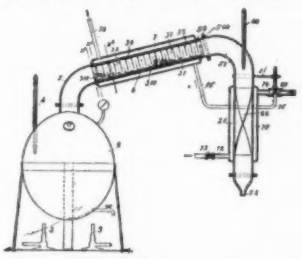
the space between the tube plates, a second series of tubes extending partially into the uppermost compartment



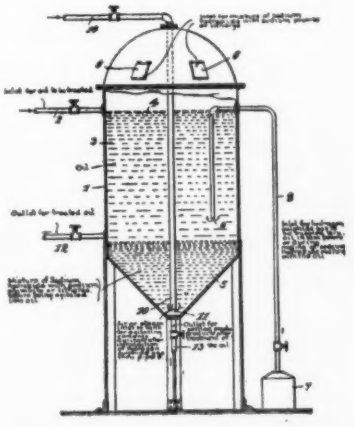
from the said space, a liquid outlet near the bottom of said uppermost compartment, a vapor outlet in the top of the uppermost compartment and means for circulating a heating-medium around the first-mentioned series of tubes.

1,584,267. Still. Jacob Young, Winthrop, Mass. Filed January 17, 1922. Serial No. 529,839. 4 Claims. (Cl. 196—139.)



1. An upwardly inclined tubular chamber constituting a portion of a vapor duct, combined with a number of plates extending from the upper wall part way to the lower wall of said chamber, and foraminous plates extending upward from the lower wall in the spaces between said plates extending from the upper wall.

1,580,531. Process of Desulphurizing Petroleum Oils. James B. Rather, Brooklyn, N. Y., assignor to Standard Oil Co. of New York, N. Y., a corporation of New York. Filed May 9, 1923. Serial No. 637,625. Five claims. (Cl. 196—33.)



1. The process of treating petroleum oils, which includes, dissolving hydrogen sulphide gas in the oil, and combining the oil containing said dissolved gas with a mixture of sodium hydroxide and litharge (or sodium plumbite) to produce lead sulphide suspended in the oil, the lead sulphide serving to promote reaction between sulphurous elements in the oil and the plumbite solution in such manner that the oil so treated is sweet to the "doctor" and noncorrosive in character.

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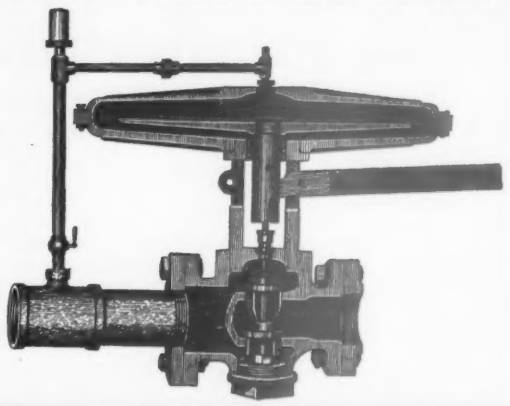

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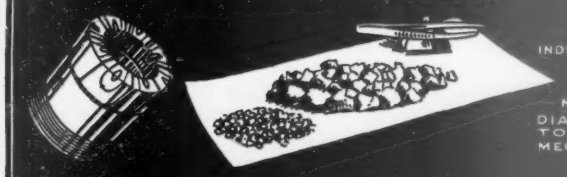

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M. A. SPELLACY HOME; TALKS ABOUT COLOMBIA

LIMA, Ohio, June 19.—Michael A. Spellacy, world traveler, is back home in Lima after traveling thousands of miles in South America in quest of new oil fields. He is visiting his brother, Simon Spellacy of 528 W. North St.

While on this last expedition he tells the Lima News he was endeavoring to obtain concessions on great tracts of land that are likely to produce oil, and maintained headquarters in Bogota, the capitol of Colombia, and basic center of his operations.

Mr. Spellacy says there has been very little done in South America aside from the operations at Barranca Bermeja by the Tropical Oil Co., in proving oil territory in Colombia. Except for the present operations of that company, the present campaign is not extensive.

The Jenks-Colombia, Ltd. interests are drilling near Puerto, Colombia and have contracted with Abercrombie and Fitch for five test wells. The Standard Oil Co., of California is drilling between Barranquilla and Cartagena. There have been a half dozen wells drilled by these companies and the Gulf Oil Corp., along the coast, covering a distance of a hundred miles in an effort to get production near water transportation. Geology says it should be there, but if so it has not yet been found in commercial quantities Mr. Spellacy says.

It is his opinion that when the market in the United States demands and the price justifies, the tropics can supply oil as rapidly as pipeline facilities permit, up to 100,000 barrels a day for an almost indefinite period.

Mr. Spellacy's exploring in the tropics has led him to believe that in the course of time, Colombia will be an even greater oil producing country than Venezuela. He also predicts that the future greater oil production of the world will be along the eastern Andes Mountains, starting at Venezuela and extending through Colombia, Peru, Argentina, Bolivia and Patagonia.

Mr. Spellacy will return to Bogota in August.

THE SUN A DEHYDRATOR IN PANHANDLE FIELD

AMARILLO, Tex., June 19.—In the case of most of the wells showing water along with their production of oil in the Hutchinson County Field, it has been found that the water and oil separate naturally, leaving good pipe line oil at the top. Some wells in which the oil had b.s. content to a small degree may be classed as producers of good pipe line oil as under the sun's rays the cut oil clears out into marketable crude. There are cases where the oil must be treated to convert it into pipe line crude, but these are exceptional. The Lenix No. 1 Smith, which is one of the largest producers in the field which showed some cut oil but when it was exposed to the sun it became marketable crude.

GAS ENGINEER EXAMINATION

WASHINGTON, D. C., June 19.—The Civil Service Commission announces a competitive examination for associate natural gas engineer to fill a vacancy in the Bureau of Mines, for duty at Fort Worth, Tex., and similar vacancies; applictions must be on file at Washington not later than July 13. The entrance salary is $3,000 a year, advancing to a maximum of $3,600 a year.

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Lucey Mfg. Corp.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Cups—Composition—
Williamsport Development Co.

Cups—Leather—
Auer, C. A.

Cutters—Pipe—
Border Co.
Nye Tool & Machine Works.
Trimont Mfg. Co.

Cylinders—Compressor—
Hope Engineering & Supply Co.

Cylinder Stocks—
Barnsdall Refining Co.
Pure Oil Co.
Texas Company, The

D

Dehydrating Process—
Barnickel, Wm. S., & Co.

Dephlegmators—
National Gas Products Co.
Newton Process Mfg. Co.
Smith, A. O., Corp.

Depletion Reports—
American Appraisal Co.

Derricks—Steel—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Derricks—Turnbuckle—
National Turnbuckle Derrick Co.

Diamonds for Core Drilling (See Carbon—Black Diamond)—

Die Heads—Bolt Threading—
Bignall & Keeler Machine Works.
Landis Machine Co.

Die Heads—Stationary Pipe Threading—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.

Diesel Engines (See Engines)—

Dies—Pipe Threading—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.
Nye Tool & Machine Works.

Direct Driven Pumps (See Pumps)

Disc Bits (See Bits—Disc)—

Dissolved Acetylene (See Acetylene)—

Ditchers—Pipe Line—
Barber-Greene Co.
Buckeye Traction Ditcher Co.

Draw Works—
Lucey Mfg. Corp.
National Supply Co.
Titusville Iron Works Co.

Drillers Hose (See Hose)—

Drilling and Fishing Tools—
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Brown Tool Co., Inc.
Burns Tool Co.
Continental Supply Co.
Cushing, Tim, Tool & Supply Co.
Emsco Derrick & Equip Co.
General Oil Tools Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Murray Tool & Supply Co.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

Drilling Engines (See Engines)—

Drilling Equipment—
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Star Drilling Machine Co.

Drilling Machines—
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

Drilling Tools (See Drilling and Fishing Tools)—

Drilling Valves (See Valves)—

Drills—Portable Air—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drop-Forged Wrenches (See Wrenches)—

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg. Co.

E

Electrical Equipment—
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

Electrical Apparatus (See Apparatus—Electric)—

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Electric Steel Castings—See Castings—Electric Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
B. & A. Specialty Co.
D & B Pump & Supply Co.
Dunn Mfg. Co.

Enamels—
Arco Company, The
Detroit Graphite Co.
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Brooks Engineering Corp.
Hope Engineering & Supply Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Petroleum Engineering Corp.
Power Specialty Co.
Westcott & Greis.
Widdell Engineering Co.

Engineers—Fire Protection—
Brooks Engineering Corp.
Foamite-Childs Corp.

Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.

Engineers—Oil Treating—
Barnickel, Wm. S., & Co.
National Gas Products Co.

Engines—Crude Oil—
Continental Supply Co.
Western Machinery Co.

Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.

Engines Drilling—
Ajax Iron Works
Beaver Manufacturing Co.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Brownell Co., The
Buda Co.
Buffalo Gasolene Motor Co.
Clark Bros. Co.
Climax Engineering Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.

Engines—Gas—
Beaver Manufacturing Co.
Bessemer Gas Engine Co.
Bruce-MacBeth Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Climax Engineering Co.
Continental Supply Co.
Cooper, C. & G., Co.
Emsco Derrick & Equipment Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M., Co.
Marion Mch. Fdy. & Supply Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Gasoline—
Beaver Manufacturing Co.
Buda Co.
Buffalo Gasolene Motor Co.
Continental Motors Corp.
Fairbanks-Morse & Co.
Hercules Motor Corp.
International Harvester Co. of America.
Novo Engine Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-Morse & Co.
Franklin Valveless Engine Co.
International Harvester Co. of America.
Ingersoll-Rand Co.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Power Mfg. Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.

Engines—Semi-Diesel, Oil—
Chicago Pneumatic Tool Co.

Engines—Steam—
Ajax Iron Works.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.

Evaporators—
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

Extinguishers—Fire—
Foamite-Childs Corp.

F

Fabricators for Gasoline Plants and Refineries—
National Gas Products Co.
Stearns-Rogers Mfg. Co.

Filters—Oil—
Burt Mfg. Co.

Fishing Tools (See Drilling and Fishing Tools)—

Fittings—Dropped Forged Steel—
Vogt, Henry, Machine Co.

Fittings—Forged Steel—
Central Forging Co.

Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Welworth Co.

Fittings—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
Victaulic Co. of America.

Fittings—Steel—
Dayton Pipe Coupling Co.
Kerotest Mfg. Co.
Ohio Steel Foundry Co.

Flanges—Brass, Iron and Steel—
Jefferson Union Co.
Metric Metal Works.

Flange Unions—
Gaso Pump & Burner Mfg. Co.
Wheatley Bros. Machine Works

Flashlights—
National Carbon Co.

Floating Roofs and Decks—
Chicago Bridge & Iron Works.

Floodlights—
Pyle-National Co.

Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

Forgings—
Champion Machine & Forging Co.

Friction Clutch Pulleys (See Pulleys)—

Fuel Oil (See Oil —Fuel)—

Fuller's Earth—
Sinclair Refining Co.

G

Gas Compressors (See Compressors—Gas)—

Gas Engines (See Engines—Gas)

Gas Holders—
Chicago Bridge & Iron Works.

Gaskets—
Garlock Packing Co.
McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.

Gas Masks & Safety Appliances—
Mine Safety Appliance Co.

Gas Meters (See Meters)—

Gas Oil (See Oil—Gas)—

Gasoline—
Berry's, James B., Sons Co.
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

Gasoline—Natural—
Chestnut & Smith Corp.
National Gas Products Co.
Skelly Oil Co.
Warren Petroleum Co.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Widdell Engineering Co

Gas Regulator Casinghead—
Davis, G. M., Regulator Co.
National Gas Products Co.

Gas Scrubbers—
National Gas Products Co.
Newton Process Mfg. Co.

Gauge Glass—High Pressure—
Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.

Gauges—Automatic Tank—
Brooks Engineering Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Metric Metal Works.

Gauges—Test—
Equitable Meter & Mfg. Co.
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Emsco Derrick & Equipment Co.
Nuttall, R. D., & Co.

Gears—Reverse—
Emsco Derrick & Equipment Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Equitable Meter & Mfg. Co.
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Caulking Pneumatic—
Chicago Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Continental Supply Co.
Dodge Mfg. Corp.

Hangers—Tubing—
Hercules Tool Co.

Hatches—Gauges and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Heat Exchangers—Fluid—
Braun, C. F., & Co.
Ross Heater & Mfg. Co., Inc.

Hoists—Pneumatic, Geared and Universal—
Chisholm-Moore Mfg. Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Chisholm-Moore Mfg. Co.
Ford Chain Block Co.
Sullivan Machinery Co.
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hooks for Rods and Tubing—
B. & A. Specialty Co.
Dunn Mfg. Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hydraulic Jacks (See Jacks)—

Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Injectors—
Penberthy Injector Co.

Insulation Materials—
Celite Products Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association

Insurance—Tornado—
Oil Insurance Association.

Iron—Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Mfg. Co. of Texas.
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Norris, W. C.
Spang & Co.

Jars—
Arbon, Paul, & Co.
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

L

Lacquers—
Arco Company, The
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electric Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lifting Jacks—(See Jacks)—

Lighting Equipment—
Pyle National Co.
Westinghouse Electric & Mfg. Co.

Liquid Level Controls (See Controllers)—

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricating Oils (See Oils)—

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Manzel Brothers Co.
McCord Radiator & Mfg. Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manholes—Tank—
Brooks Engineering Corp.

Manifolds—
Reid, Joseph, Gas Engine Co.

Meters—Gas—
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Greis.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsburgh Meter Co.

Molded Goods—Rubber—
Goodyear Tire & Rubber Co.

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment
Campbell, J. A.
Cooper, C. & G. Co.
Griscom-Russell Co.
National Gas Products Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

Nozzles—Spray—
Power Plant Equip Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burners (See Burners—Oil)—

Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Steel Construction Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.

Oil—Fuel—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co
Texas Company, The

Oil—Gas—
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The

Oil—Lubricating—
Barnsdall Refining Co.
Berry's James B., Sons Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Pennzoil Co.
Pure Oil Co.
Sinclair Refining Co
Skelly Oil Co.
Texas Company, The

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pennzoil Co.
Pure Oil Co.
Skelly Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.
Houston Pump & Supply Co.

Oil Refinery Equipment (See Refinery Equipment)—

Oil Securities (See Securities)—

Oil Suction and Discharge Hose—(See Hose)—

Oil Well Cementing—
Halliburton Oil Well Cementing Co.

Oil Well Screens (See Screens)—

Oil Well Tools—
D & B Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Meier, E. C., Lubricating Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.

Packing—
Crane Packing Co.
Durabla Mfg. Co.
Garlock Packing Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.

Packing—Metallic—
Crane Packing Co.

Paint Guns—
Binks Spray Equipment Co.

Painting Equipment—Mechanical
Brown Instrument Co.
Matthews, W. N., Corp.

Paints—
Aluminum Co. of America
American Asphalt Paint Co.
Arco Company, The
Cook Paint & Varnish Co.
Detroit Graphite Co.
Dixon, Joseph, Crucible Co.
Du Pont de Nemours, E. I. & Co., Inc.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Hill Hubbell & Co.
National Lead Co.
Sherwin-Williams Co.
St. Louis Surfacer & Paint Co.

Pipe—Cast Iron—
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.

Pipe—Steel—
Central Tube Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Sons, Inc.
South Chester Tube Co.
Spang Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
South Chester Tube Co.
Superior Tube Co.

Pipe and Nipple Threading Machines—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.
Ryerson, Jos. T., & Sons., Inc.

Pipe Clamps (See Clamps—Pipe)

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Coatings—
Hill, Hubbell & Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Equipment—
Wheatley Bros. Machine Works
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Straightening Machines—
W-K-M Co., Inc.

Pipe Suspension Device—
Stearns-Rogers Mfg. Co.

Pipe Threaders—Power—
Williams Tool Corp.

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.

Piping—Fabricated—
Midwest Piping & Supply Co.

Piping—Hard Rubber—
United States Rubber Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.

Pistons—
Guiberson Corp.
Heppenstall Forge & Knife Co.

Pistons—Expansion—
Wilson Oil Tools Corp.

Pistons—Slush Pump—
Guiberson Corp.

Plugs—Bottom Water—
Guiberson Corp.

Pre-Heaters—
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

Preservatives—Asphalt—
American Asphalt Paint Co.

Pulleys—Wood, Iron and Steel—
Continental Supply Co.
Dodge Mfg. Co.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumpers—Long Stroke—
Farley Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works.
Axelson Machine Co.
Bryson Jackson Pump Mfg. Co., Inc.
D & B Pump & Supply Co.
Farley Machine Co.
Goulds Pumps, Inc.
Jones, S. M., Co.
Myers, F. E., & Bros. Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Jacks (See Jacks)—

Pumping Powers—
Bessemer Gas Engine Co.
Buda Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Boiler Feed—
Ajax Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-More & Co.
Gardner Governor Co.
Goulds Pumps, Inc.
Oil Well Supply Co.

Pumps—Centrifugal—
American Well Works.
Byron Jackson Pump Mfg. Co. Inc.
Dean Hill Pump Co.
Fairbanks-Morse & Co.
Goulds Pumps, Inc.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Bessemer Gas Engine Co.

Pumps—Electric—
Prescott Co.

Pumps—Fuel Oil Service—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.

Pumps—Fuel Oil Transfer—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.

Pumps—Gasoline and Oil for Filling Stations—
Gilbert & Barker Mfg. Co.

Pumps—Gear Driven—
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.

Pumps—Hot Oil—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Goulds Pumps, Inc.
Pumps—Pipe Line—
Byron Jackson Pump Mfg. Co., Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Prescott Co.
Wheatley Bros. Machine Works
Worthington Pump & Machinery Corp.
Pumps—Portable—
Gaso Pump & Burner Mfg. Co.
Pumps—Power—
Dean Brothers Co.
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Novo Engine Co.
Prescott Co.
Waukesha Motor Co.
Pumps—Refinery—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Pumps—Rotary—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.
Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.
Pumps—Slush—
Gardner Governor Co.
Pumps—Steam—
Dean Brothers Co.
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Pumps—Suction—
Gaso Pump & Burner Mfg. Co.
Pumps—Vacuum—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Pumps—Water—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Prescott Co.
Punch—Rotary Belt—
Victor Balata & Textile Belting Co.
Purifiers—Oil Absorption—
Sharpless Specialty Co.
Pyrometers—
Brown Instrument Co.
Republic Flow Meters Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.
Ratchet Pipe Threaders—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Ratchet Reamers—
Nye Tool & Machine Works.
Ratchet Stocks and Dies—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Receiving Boxes—
Reid, Joseph, Gas Engine Co.
Recorders—Differential Pressure—
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Metric Valve Works.
Refinery Equipment—
American Radiator Co.
Blaw-Knox Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works.
Cross Engineering Co.
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Meehan Foundries.
Smith, A. O., Corp.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine, Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.
Widdell Engineering Co.
Refractories—Furnace, Stills and Baffles—
Botfield Refractories Co.
National Gas Products Co.
Refrigerating Machinery—
Carbondale Machine Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.
Regulators—
Brown Instrument Co.
Fisher Governor Co., Inc.
Gilfillan Machine Works.
Smith Separator Co.
Regulators—Gas—
Chaplin-Fulton Mfg. Co.
Davis, G. M., Regulator Co.
Equitable Meter & Mfg. Co.
Fisher Governor Co.
Metric Metal Works.
National Gas Products Co.
Smith Separator Co.
Rental Service—
Bridgeport Machine Co.
Reversible Clutches—
Bessemer Gas Engine Co.
Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Rigs—Drilling, All Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.
Rod Guides—
Meier, E. C., Lubricating Co.
Rods—Polish—
Jones, S. M., Co.
Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.
Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D & B Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.
Rods—Valve—
Jones, S. M., Co.
Roofing—Asbestos—
Johns-Manville, Inc.
Rope Socket Metal—
Eagle-Picher Lead Co.
Rope—Manila—
Ajax Rope Co., Inc.
Boviard Supply Co.
Republic Supply Co.
Rope—Wire—
Ajax Rope Co., Inc.
American Cable Co.
Boviard Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Leschen, A. & Sons, Rope Co.
Wickwire-Spencer Steel Corp.
Williamsport Wire Rope Co.
Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Rotary Drilling Equipment—
Emsco Derrick & Equipment Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.
Rotary Lines (See Rope—Wire)—
Rotary Post—
Reed Roller Bit Co.
Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.
Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila—
Ajax Rope Co., Inc.
Plymouth Cordage Co.
Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Wickwire-Spencer Steel Corp.
Screens—Oil Well—
Layne & Bowler Co.
Screens—Water Well—
Layne & Bowler Co.
Screws Temper—
Burns Tool Co.
Separators—Centrifugal—
Miller, Max B., & Co.
Sharpless Specialty Co.
Separators—Gas and Oil—
Smith Separator Co.
Separators—Steam—
Volz Engineering Equipment Co.
Sheet Lead—Chemical and Antinominal—
Eagle-Picher Lead Co.
Sheets—Corrugated, Black and Galvanized—
American Sheet & Tin Plate Co.
Ryerson, Jos. T., & Son, Inc.
United Alloy Steel Corp.
Sheets—Steel—
American Sheet & Tin Plate Co.
Republic Iron & Steel Co.
Sheffield Steel Corp.
United Alloy Steel Corp.
Shingles—Asbestos—
Johns-Manville, Inc.
Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Slush Pump Pistons (See Pistons)—
Slush Pumps (See Pumps)—
Smoke Stacks—
Donovan Boiler Works.
Snuffers—Fire—
Simplex Equipment Co.
Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.
Sockets—Sucker Rod—
Guiberson Corp.
Sockets—Swivel—
Arbon, Paul, & Co.
Sockets—Wire Rope—
Chicago Steel Foundry Co.
Soda Ash—
Mathieson Alkali Works, Inc.
Soda—Caustic—
Mathieson Alkali Works, Inc.
Solders—Bar and Wire—
Eagle-Picher Lead Co.
Hoyt Metal Co.
Spark Plugs—
Mosier Metal Products Corp.
Spears—
Acme Fishing Tool Co.
Brown Tool Co., Inc.
Sprockets—Power Transmission—
Ajax Iron Works.
Chain Belt Co.
Stands—Vice—
Nye Tool & Machine Works.
Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.
Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.
Steel—Bit—
Central Steel Co.
United Alloy Steel Corp.
Steel—Hot Rolled Strip—
Central Steel Co.
Steel—Special—
Andrews Steel Co.
Central Steel Co.
United Alloy Steel Corp.
Steel Bridges (See Bridges)—
Steel Bull Wheels (See Bull Wheels—Steel)—
Steel Castings (See Castings)—
Steel Couplings for Casting, Line Pipe, Drill Pipe and Tubing (See Couplings)—
Steel Crown Blocks (See Crown Blocks)—
Steel Derricks (See Derricks)—
Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.
Steel Fittings (See Fittings)—
Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Steel Plate Construction—
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Steel Construction Co.
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.
Steel Sheets (See Sheets, Steel)—
Steel Valves (See Valves, Steel)—
Steel Walking Beams (See Walking Beams—Steel)—
Steel Wheels and Tug Rims—
International Derrick & Equipment Co.
Stills—
Blaw-Knox Co.
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Steel Construction Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Smith, A. O., Corp.
Vogt, Henry, Machine Co.
Widdell Engineering Co.
Stocks and Dies—
Borden Co.
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Structural Steel Fabricators (See Steel Fabricators)—
Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.
Sucker Rods (See Rods—Sucker)
Suction Pumps (See Pumps)—
Sulphuric Acid—
Eagle-Picher Lead Co.
Superheaters—Steam—
Power Plant Equipment Co.
Swabs—
Arbon, Paul, & Co.
Burt Corporation.
Guiberson Corp.
Simplex Equipment Co.
Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.
Swing Line Equipment—
Brooks Engineering Corp.
Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tank Equipment—
Brooks Engineering Corp.
Oil Conservation Engineering Co.
Tanks—Bolted—
Butler Mfg. Co.
Columbian Steel Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.
Tanks—Bulk Station—
Butler Mfg. Co.
Graver Corp.
Tanks—Cylindrical—
Petroleum Iron Works Co.
Tanks—Elevated Steel—
Chicago Bridge & Iron Works.
Tanks—Field Storage—
American Car & Foundry Co.
Donovan Boiler Works.
Graver Corp.
Kaw Steel Construction Co.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
United Iron Works, Inc.
Tanks—Horizontal Storage—
Graver Corp.
Kaw Steel Construction Co.
Maloney Tank Mfg. Co.
Tanks—Run Down—
Donovan Boiler Works.
Graver Corp.
Kaw Steel Construction Co.
Newton Process Mfg. Co.
Tanks—Truck—
Butler Mfg. Co.
Columbian Steel Tank Co.
White Co.
Tanks—Underground—
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.
Tanks—Welded—
Chicago Bridge & Iron Works.
Taper Taps—
Hughes Tool Co.
Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.
States Engineering Co.
Temper Screws (See Screws)—
Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Brown Instrument Co.
Taylor Instrument Co.
Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The.
Landis Machine Co.
Thread Protectors—
Spang & Co.
Tightener—Belt—
Victor Balata & Textile Belting Co.
Tires—Automobile—
Continental Supply Co.
Tires—Pneumatic & Solid—
Kelly-Springfield Tire Co.
Tires—Truck—
Kelly-Springfield Tire Co.
Tongs—
Bridgeport Machine Co.
Wilson Oil Tools Corp.
Tongs—Back Up—
Williams, J. H., & Co.
Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.
Tongs—Casing—
Dunn Mfg. Co.
Guiberson Corp.
Tongs—Chain Pipe—
Armstrong Bros. Tool Co.
Williams, J. H., & Co.
Tongs—Pipe—
National Transit Pump & Machine Co.
Tongs—Rotary—
Dunn Mfg. Co.
Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.
Tongs—Tubing—
Dunn Mfg. Co.
Tool Chests—Pipe—
Nye Tool & Machine Works.
Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Torches—
Oxweld Acetylene Co.
Tractor Oil (See Oil—Tractor)—
Tractors—
Cleveland Tractor Co.
International Harvester Co. of America.
Trailers—
Spencer Trailer Co.
Transmission Belt—Rubber—
Goodrich, B. F. Rubber Co.
United States Rubber Co.
Transmission Lining—
Stanley Belting Corp.
Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.
Trenchers—Vertical Boom—
Barber-Greene Co.
Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
Graham Brothers.
International Harvester Co. of America.
White Co.
Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.
Tubes—Boiler Steel—
Continental Supply Co.
National Tube Co.
Ryerson, Jos. T., & Sons, Inc.
Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
Continental Supply Co.
National Tube Co.
Reading Iron Co.
South Chester Tube Co.
Spang, Chelfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.
Tubing Catchers—
Continental Supply Co.
Dunn Mfg. Co.
Guiberson Corp.
Tubing Protectors (See Rod Guides)—
Tubular Goods—
Central Tube Co.
Continental Supply Co.
Oil Well Supply Co.
Republic Iron & Steel Co.
Spang, Chelfant & Co., Inc.
Wheeling Steel Corp.
Tubular Goods—Wrought Iron—
Byers, A. M., Co.
Reading Iron Co.
Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

U

Underreamer Body Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Underreamers—
Bridgeport Machine Co.
Brown Tool Co., Inc.
Guiberson Corp.
Wilson Oil Tools Corp.
Unions—
Central Forging Co.
Jefferson Union Co.

V

Valuations—
American Appraisal Co.
Valves—Balata—
Victor Balata & Textile Belting Co.
Valves—Blow-Off—
Homestead Valve Mfg. Co.
Merco Nordstrum Valve Co.
Valves—Brass and Bronze—
Homestead Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Co.
Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Valves—Drop Forged Steel—
Edwards Valve & Mfg. Co.
Vogt, Henry, Machine Co.
Valves—Gate—High and Low Pressure—
Chapman Valve Mfg. Co.
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.
Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Merco Nordstrum Valve Co.
Reading Steel Casting Co.
Valves—Metal Pump—
Durabla Mfg. Co.
Valves—Pump—
United States Rubber Co.
Valves—Relief—Supersensitive—
Davis, G. M., Regulator Co.
Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works.
Powell, Wm., Co.
Reading Steel Casting Co.
Valves—Tank Vent—
Brooks Engineering Corp.
Oil Conservation Engineering Co.
Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
D & B Pump & Supply Co.
Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.
Varnishes—
Arco Company, The.
Detroit Graphite Co.
Sherwin-Williams Co.
Vises—Bench—
Nye Tool & Machine Works.
Vises—Pipe—
Nye Tool & Machine Works.
Vises—Post—
Nye Tool & Machine Works.

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.
Walking Beams—Steel—
Emsco Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Water Cooling Systems—
Power Plant Equipment Co.
Water Softeners and Filters—
Butler Mfg. Co.
Graver Corp.
Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Weight Indicators—
Hughes Tool Co.
Welding Accessories—Electric—
Wilson Welder & Metals Co.
Welding and Cutting Apparatus—
Oxweld Acetylene Co.
Welding Machines—Electric—
Wilson Welder & Metals Co.
Welding Supplies—
Oxweld Acetylene Co.
Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.
Well Shooting—
Eastern Torpedo Co.
Zero Hour Torpedo Co.
Wheels—Pipe Cutter—
Nye Tool & Machine Works.
Wheels—Steel Automotive—
Budd Wheel Co.
Winches—
Braden Co.
Brooks Engineering Co.
Oil Conservation Engineering Co.
Wire Lines (See Cables—Steel)—
Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.
Working Barrels—
Axelson Machine Co.
D & B Pump & Supply Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor Working Barrel Co.
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.
Wrenches—Closet Spuds—
Nye Tool & Machine Works.
Wrenches—Drop Forged—
Williams, J. H., & Co.
Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Mfg. Co.
Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works.

Z

Zinc Oxide—
Eagle-Picher Lead Co.

XUM

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for April

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	3,840,000	128,000
Gulf Pipe Line Co.	1,041,263	34,709
Texas Pipe Line Co.	457,001	15,233
Magnolia Petroleum Co.	1,285,967	42,866
Empire Pipe Line Co.	723,420	24,114
Cosden Pipe Line Co.	874,805	29,160
Sinclair Pipe Line Co.	1,653,840	55,128
*Other lines	7,920,000	264,000
Total April	17,796,296	593,210
Total March	17,668,564	569,953
Difference	127,732	23,257

Shipments

†Prairie Pipe Line Co.	4,332,972	144,432
Gulf Pipe Line Co.	1,086,188	36,206
Texas Pipe Line Co.	787,526	26,251
Magnolia Petroleum Co.	1,504,766	50,159
Empire Pipe Line Co.	736,064	24,535
Cosden Pipe Line Co.	881,084	29,369
†Sinclair Pipe Line Co.	2,569,697	85,656
*Other lines	8,820,000	294,000
Total April	20,718,297	690,608
Total March	20,540,959	662,617
Difference	177,338	27,991

Stocks

*Prairie Oil & Gas Co.	27,311,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line and Gypsy Oil	6,341,159
The Texas Company	3,608,827
Magnolia Petroleum Co.	4,939,729
Empire Pipe Line Co.	2,802,158
Cosden Pipe Line Co.	1,941,248
*Sinclair Crude Oil Purchasing Co.	20,200,000
Carter Oil Co.	13,672,648
*Other lines	9,800,000
Total April	92,616,769
Total March	94,761,334
Difference	2,144,565

*Estimated. †Prairie shipments include Texas crude oil. Sinclair shipments include Texas and Wyoming crude oil.

Note: Stocks do not include 5,900,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for March and April:

	Mar., '26	Apr., '26
Nat. Transit	152,572.78	176,931.37
S. W. Pa. P. L.	92,161.74	89,773.16
Eureka P. L.	373,066.53	372,871.02
Buckeye P. L. (Macksburg)	327,422.18	304,514.55
Buckeye P. L. (Cleveland)	11,923.54	12,060.87
Buckeye P. L. (Lima, etc.)	135,330.32	127,204.85
Indiana P. L.	10,428.03	9,095.76
Cumberland P. L.	284,867.52	273,842.36
N. Y. Transit	18,958.88	20,181.07
Tidewater P. L.	154,702.25	160,027.79
Pure Oil Co.	178,024.39	171,766.80
Emery P. L.	51,169.64	48,703.74
Indiana Ref.	86,931.73	93,143.14
Paragon Dev.	26,590.23	24,723.50
Pittsburgh P. L.	6,801.52	6,733.43
Total	1,910,950.33	1,890,573.41
Daily average	61,643.56	63,019.11

Note: Indian Refining Co. also reported other receipts of 301,677.79 bbls. Paragon Refining Co. had other receipts of 159,041.18 bbls. Paragon Development had other receipts of 2,227.34 bbls. Pure Oil had other receipts of 64,473.26 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for March and April:

	Mar., '26	Apr., '26
Nat. Transit	285,116.90	314,763.21
S. W. Pa. Pipe	389,473.31	409,564.75
Eureka P. L.	188,567.14	163,392.74
Buckeye P. L. (Macksburg)	130,098.28	94,264.91
Buckeye P. L. (Cleveland)	1,364.43	1,162.42
Buckeye P. L. (Lima, etc.)	744,048.97	823,641.06
Indiana P. L.	995,973.29	963,616.70
Cumberland P. L.	151,179.06	162,112.44
N. Y. Transit	579,234.50	668,407.25
Northern P. L.	130,218.72	133,960.98
Tidewater P. L.	174,944.54	93,030.34
Pure Oil Co.	217,525.82	205,777.75
Emery P. L.	48,128.83	45,829.05
Paragon Ref.	159,926.73	170,282.16
Indian Ref.	420,774.92	288,296.97
Paragon Dev.	32,731.97	26,494.22
Pittsburgh P. L.	7,088.04	6,539.32
Total	4,657,395.45	4,571,126.27
Daily average	150,238.56	152,370.87

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of March and April, were as follows:

	Mar., '26	Apr., '26
Nat. Transit	1,040,222.33	1,069,233.29
S. W. Pa. P. L.	690,133.67	688,704.11
Eureka P. L.	1,497,216.56	1,621,601.26
Buckeye P. L. (Macksburg)	351,943.86	417,370.13
Buckeye P. L. (Cleveland)	52,018.53	73,536.91
Buckeye P. L. (Lima, etc.)	2,301,324.72	2,369,543.33
Indiana P. L.	558,421.46	544,568.51
Cumberland P. L.	593,665.61	599,474.86
Southern P. L.	488,804.68	481,210.52
N. Y. Transit	731,527.82	695,608.61
Northern P. L.	458,451.24	436,138.52
Pure Oil Co.	429,500.88	460,534.48
Emery P. L.	32,243.81	34,514.24
Paragon Ref.	85,108.55	72,985.28
Indian Ref.	123,338.21	231,194.41
Paragon Dev.	4,370.50	4,918.23
Pittsburgh P. L.		4,614.59
Total	9,438,292.43	9,805,851.27
Decrease	141,102.45	*367,558.84

*Increase.

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of March and April, showing the gross stocks of the above fields:

	Mar., '26	Apr., '26
Penna.	3,842,525.79	4,076,568.47
Lima	958,283.05	947,707.33
Kentucky	1,166,146.58	1,163,245.60
Mid-Continent	3,408,098.00	3,459,618.16
Illinois	63,239.01	158,711.71
Total	9,438,292.43	9,805,851.27

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1923	1924	1925	1926
January	75,790	62,638	56,831	55,630
February	71,092	68,023	60,606	60,394
March	76,592	68,721	60,575	61,644
April	75,614	71,058	63,062	63,019
May	77,365	63,942	59,217	.....
June	77,593	63,230	61,270	.....
July	71,579	64,208	62,639	.....
August	76,910	59,942	59,686	.....
September	72,358	69,930	62,510	.....
October	76,256	64,796	60,995	.....
November	70,762	56,282	59,350	.....
December	69,271	55,814	57,974	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1923	1924	1925	1926
January	171,067	145,518	157,889	156,056
February	164,219	148,732	160,863	159,488
March	185,487	147,098	154,591	150,239
April	170,751	147,611	151,429	152,371
May	177,102	134,997	146,995	.....
June	173,598	143,010	149,467	.....
July	168,330	124,187	161,338	.....
August	142,776	123,120	161,730	.....
September	137,266	127,325	156,719	.....
October	134,597	123,170	145,388	.....
November	131,426	124,400	143,582	.....
December	139,909	151,292	150,162	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1924	1925	1926
January	12,907,202	11,353,276	9,859,170
February	11,844,068	11,192,924	9,579,354
March	10,906,752	11,158,297	9,438,293
April	10,922,742	11,062,082	9,805,851
May	11,335,309	11,207,562	.....
June	11,544,204	11,093,796	.....
July	12,062,361	11,067,453	.....
August	12,221,676	10,974,481	.....
September	12,206,836	10,781,753	.....
October	12,664,061	11,086,850	.....
November	12,268,530	11,068,158	.....
December	11,583,680	10,458,445	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1925—	Receipts	Shipmts.	Stocks
April	3,040.41	1,780.11	13,159.04
May	2,814.99	5,719.90	10,254.13
June	3,052.75	1,221.83	12,085.05
July	2,639.34	3,174.10	11,550.29
August	3,216.97	1,677.99	13,189.27
September	2,929.99	5,352.05	10,767.21
October	2,869.75	1,499.34	12,137.62
November	2,759.66	2,571.32	12,283.40
December	2,661.87	3,441.67	11,503.60
1926—			
January	2,990.16	1,478.35	13,015.41
February	2,580.23	2,776.19	12,819.45
March	2,754.62	1,732.77	13,841.30
April	3,137.40	4,519.68	12,459.02

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, May 1	2,740,384.77
Runs from wells	581,315.39
Other receipts	399,373.14
Regular deliveries	464,734.35
Other deliveries	523,336.85

The amount of Illinois oil run by the Tidewater Pipe Co. in April was 29,641.65 bbls. and deliveries were 22,869.65 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—		
May	692,671.94	568,573.62
June	700,090.46	589,535.24
July	724,481.26	564,713.19
August	673,652.38	650,649.97
September	706,434.87	610,697.61
October	706,532.00	633,682.33
November	664,556.30	488,449.19
December	665,086.99	578,938.47
1926—		
January	665,243.62	516,083.76
February	632,611.99	506,310.51
March	753,300.74	524,625.95
April	610,957.04	487,604.00

The Tidewater Pipe Co., Ltd., also delivered in April, 75,798.73 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

	ATLANTIC PORTS						GULF COAST PORTS					
Average bbls. per day—	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
January	9,355	13,484	32,581	19,387	5,097	79,804	.....	.....	.....	65	65	79,869
February	13,111	9,464	28,214	24,393	20,107	95,289	.....	.....	.....	.....	.....	95,289
March	7,000	2,516	48,839	16,612	16,903	91,870	.....	.....	.....	.....	.....	91,870
April	19,033	5,133	28,333	13,400	22,867	88,767	.....	.....	4,700	.....	.....	93,467

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

	ATLANTIC PORTS						GULF COAST PORTS					
Average bbls. per day—	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
January	12,451	19,484	49,451	12,645	21,903	115,934	21,903	25,871	5,645	4,871	58,290	174,224
February	14,643	16,071	60,107	9,464	20,750	121,035	22,321	50,250	6,286	6,714	85,571	206,606
March	28,387	15,935	81,742	16,290	34,258	176,613	19,355	44,097	7,096	5,294	75,842	252,464
April	15,200	14,000	76,833	10,633	29,333	156,000	19,200	24,900	2,000	4,433	50,533	206,533

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
May:	Month	18,820,328	14,443,675	13,077,697	3,493,266	11,813,996	1,886,752	2,799,542	3,167,300	69,502,556
	Daily average	607,107	465,925	421,861	112,686	381,097	60,863	90,308	102,171	2,242,018
June:	Month	19,288,135	13,832,970	12,602,540	3,229,440	9,200,372	1,830,965	2,754,498	3,389,000	66,127,920
	Daily average	642,938	461,099	420,085	107,648	306,672	61,032	91,816	109,000	2,204,264
July:	Month	20,411,049	14,263,565	12,337,598	3,686,675	7,835,819	1,898,178	3,129,199	3,348,000	66,910,083
	Daily average	658,421	460,115	397,984	118,925	252,768	61,231	100,942	108,000	2,158,390
August:	Month	21,005,580	14,441,040	11,936,079	3,558,087	7,450,580	1,858,543	3,250,448	3,177,000	66,677,357
	Daily average	677,599	465,480	385,032	114,777	240,341	56,727	104,853	102,484	2,150,883
September:	Month	20,062,763	14,825,040	11,264,890	3,393,270	6,457,950	1,776,570	3,235,625	3,212,000	64,228,108
	Daily average	668,759	494,168	375,496	113,109	215,265	56,219	107,854	107,067	2,140,937
October:	Month	20,015,076	14,921,199	11,196,511	3,477,146	6,409,281	1,871,830	3,394,990	3,248,000	64,534,033
	Daily average	645,648	481,329	361,178	112,166	206,751	60,382	109,500	104,774	2,081,743
November:	Month	19,095,907	14,590,980	10,650,087	3,221,760	5,927,955	1,758,882	3,088,121	2,992,000	61,325,693
	Daily average	636,530	486,366	355,003	107,397	197,599	58,629	102,937	99,753	2,044,190
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,883	1,763,966	3,187,164	3,086,900	61,698,743
	Daily average	620,959	455,608	352,595	106,736	195,093	56,902	102,812	99,553	1,990,282
January:	Month	19,069,563	13,674,813	10,880,814	3,250,536	5,489,620	1,606,952	3,136,280	3,014,000	60,123,578
	Daily average	615,147	441,123	350,994	104,856	177,084	51,835	104,396	97,226	1,939,438
February:	Month	17,163,963	12,387,620	9,689,120	2,877,812	4,756,836	1,583,304	2,769,605	2,931,000	54,159,860
	Daily average	612,999	442,415	346,040	102,779	169,887	56,568	98,914	104,678	1,934,281
March:	Month	18,825,786	14,312,886	10,974,341	3,334,887	5,115,837	1,889,946	3,151,250	3,327,000	60,931,933
	Daily average	607,283	461,706	354,011	107,577	165,027	60,966	101,653	107,323	1,965,546
April:	Month	18,091,771	14,468,190	10,778,760	3,330,120	5,127,510	1,959,570	3,231,404	3,272,000	60,259,325
	Daily average	603,059	482,273	359,292	111,004	170,917	65,319	104,229	109,066	2,008,644
	Total 12 months	231,100,232	170,295,816	136,318,892	40,161,815	81,633,629	21,686,058	37,128,126	38,164,290	756,478,188
	Daily average	633,151	466,536	373,476	110,032	223,654	59,414	101,721	104,559	2,072,543

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